

STATE OF CALIFORNIA
**Energy Resources Conservation
and Development Commission**

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In the Matter of:

**The Application for Certification for the
CARLSBAD ENERGY CENTER
PROJECT**

Docket No. 07-AFC-6

**CARLSBAD ENERGY CENTER LLC'S OPENING TESTIMONY,
PRELIMINARY IDENTIFICATION OF CONTESTED ISSUES,
AND WITNESS AND EXHIBITS LISTS**

December 15, 2009

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STATE OF CALIFORNIA

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Pursuant to the Committee's Revised Scheduling Order dated December 7, 2009, Applicant Carlsbad Energy Center LLC ("Applicant") herein provides opening testimony, preliminary identification of contested issues, and witness and exhibit lists in support of Carlsbad Energy Center Project's ("CECP") evidentiary hearings.

I. OPENING TESTIMONY

Applicant's opening testimony is attached hereto as **Exhibits A-1** through **A-7**. In addition, attached as **Exhibits B-1** through **B-23**, Applicant presents witnesses' declarations and their supporting qualifications.

II. PRELIMINARY IDENTIFICATION OF CONTESTED ISSUES

Below is a summary of remaining issues, following the publication of CEC staff's Final Staff Assessment ("FSA"). This information is also repeated in **Exhibits A-1** through **A-7** and Applicant's opening testimony.

A. Air Quality

Applicant has reviewed the Air Quality section of the FSA and agrees that CECP will comply with all applicable air quality laws, ordinances, regulations, and standards ("LORS") and will not result in significant adverse impacts to the environment. There are several Conditions of Certification ("COC") that Applicant provides comments on in

order to ensure that the Final Decision comports with the Final Determination of Compliance (“FDOC”) issued by the San Diego Air Pollution Control District (“SDAPCD”). These conditions are: AQ-18, 19, 20, 29, 35, 43, 44, 55, 57, 64, 65, 69, 75, 76, 82, 83, 87, 89, and 90. Many of these comments are to correct typographical errors or simple inconsistencies. These comments and corrections are attached as **Exhibit A-1**.

B. Land Use

Applicant has reviewed the Land Use section of the FSA and agrees that CECP will comply with all applicable LORS and will not result in significant adverse impacts to the environment. Applicant, however, proposes a revision to Condition of Certification LAND-1 to allow LAND-1 to better specify and ensure that the Coastal Rail Trail is encouraged by CECP. Specifically, Applicant desires to clarify the appraisal focus and process, should the project owner and the City of Carlsbad not be able to reach agreement on the location of an easement through the generating station property. Applicant’s testimony regarding this issue is attached as **Exhibit A-2**.

C. Visual Resources

Applicant has reviewed the Visual Resources section of the FSA and agrees that CECP will comply with all applicable LORS and will not result in significant adverse impacts to the environment. Applicant seeks minor changes to FSA Condition of Certification VIS-5 to better align the schedule components of the condition with potential development schedules of possible I-5 widening alternatives. Applicant also notes that endorsement of VIS-5 does not constitute a waiver of any right to defend its property against any attempted, adverse taking by any branch of government. Applicant presents testimony regarding Visual Resources in attached **Exhibit A-3**.

D. Hazardous Materials

Applicant has reviewed the Hazardous Materials section of the FSA and agrees that CECP will comply with all applicable LORS and will not result in significant

adverse impacts to the environment. As noted regarding Noise and Vibration below, there is a potential conflict between Condition of Certification HAZ-9, which prohibits locating the Coastal Rail Trail east of the railroad tracks, and the analysis in the Noise and Vibration section of the FSA that assumes the Coastal Rail Trail is located east of the railroad tracks. Applicant believes that the assumption in the Noise and Vibration section is not problematic or necessary and can be removed by the Committee.

E. Noise and Vibration

Applicant has reviewed the Noise section of the FSA and agrees that the CECP will comply with all applicable LORS and will not result in significant adverse impacts to the environment. As noted above under the topic of Hazardous Materials, there appears to be an assumption in this section of the FSA that is inconsistent with HAZ-9. Staff's Response to Comment 4.6-5 appears to assume that the Coastal Rail Trail is installed to the east of the railroad tracks. This conflicts with HAZ-9, which prohibits the project owner from granting an easement for the Coastal Rail Trail east of the Rail Corridor on the CECP site. Applicant believes that the assumption in this section is neither critical nor necessary and the integrity of CEC Staff's findings remain even if this assumption is removed.

F. Traffic and Transportation

Applicant has reviewed the Traffic and Transportation section of the FSA and agrees that the CECP will comply with all applicable LORS and will not result in significant adverse impacts to the environment. Applicant, however, requests a clarifying but minor change to Condition of Certification TRANS-5 to specify that road repairs be made for actual damage to the roads caused by CECP. Testimony related to this clarification is attached as **Exhibit A-4**.

G. Worker Safety and Fire Protection

Applicant has reviewed the Worker Safety and Fire Protection section of the FSA and agrees that CECP will comply with all applicable LORS and will not result in

significant adverse impacts to the environment. Applicant, however, requests adjustments to Condition of Certification WORKER SAFETY-8 to clarify the staffing of the site at startup. Testimony regarding this clarification is attached as **Exhibit A-5**.

H. Cultural Resources

Applicant has reviewed the Cultural Resources section of the FSA and agrees that CECP will comply with all applicable LORS and will not result in significant adverse impacts to the environment. Applicant, however, requests changes to Condition of Certification CUL-6 to tailor the condition to the circumstances involved at the CECP site. These changes would avoid the continuous presence of a Native American Monitor during any soil disturbance evolutions, since no areas of heritage or religious significance exist within the project site, and regulate archaeological monitoring as done in other CEC projects. Applicant's testimony regarding these Cultural Resources issues are set forth in **Exhibit A-6**.

I. Soil & Water Resources

Applicant has reviewed the Soil and Water Resources section of the FSA and agrees that CECP will comply with all applicable LORS and will not result in significant adverse impacts to the environment. Applicant, however, requests changes to: (a) Condition of Certification SOIL&WATER-8 to require a water purchase agreement only if CECP is constructed for and relies upon recycled water as its water supply; (b) Conditions of Certification SOIL&WATER-1 and SOIL&WATER-3 to specify that the City of Carlsbad should review and comment only on the Storm Water Pollution Prevention Plan ("SWPPP") and not approve the SWPPP as the conditions currently require; and, (c) Condition of Certification SOIL&WATER-2 to ensure the project is not expected to use truck delivery for large volumes of reclaimed water for construction purposes. Applicant's testimony re Soil & Water Resources can be found at **Exhibit A-7**.

III. APPLICANT'S WITNESSES

Witnesses identified to testify on behalf of Applicant are identified below.

Exhibits B-1 through **B-23** include the declarations and supporting qualifications for Applicant's witnesses.

<u>Exhibit</u>	<u>Witness</u>
B-1	Curtis R. Basnett
B-2	Mark Bastasch
B-3	Jim Bushnell
B-4	Marjorie Eisert
B-5	Matthew Franck
B-6	Marsha Gale
B-7	Clint Helton
B-8	Edward Holden
B-9	Francisco D. Kayas
B-10	Thomas A. Lae
B-11	Steven P. Long
B-12	Sarah Madams
B-13	Sarah Madams
B-14	Robert C. Mason
B-15	Diep Nguyen
B-16	George Piantka
B-17	James Roldan
B-18	Ronald W. Rouse
B-19	Gary Rubenstein
B-20	Jennifer Scholl
B-21	W. Geoffrey Spaulding, Ph.D.
B-22	John Steinbeck
B-23	Fatuma I. Yusuf, Ph.D.

IV. APPLICANT'S EXHIBITS

Applicant presents its preliminary list of exhibits in **Exhibit C** attached hereto.


These exhibits are also presented on the enclosed disc and will be provided to the Committee, Hearing Officer, and all parties. Where oversize or voluminous exhibits exist, Applicant has identified as such and whether the exhibit is available on the CEC's website (at <http://www.energy.ca.gov/sitingcases/carlsbad/documents/index.html>) or identifies that the exhibit is available upon request.

V. CONCLUSION

With the publication of the FSA, Applicant is confident that the CECP AFC proceeding is ready for evidentiary hearings and a favorable decision by the California Energy Commission approving this important project.

Date: December 15, 2009

Stoel Rives LLP

A handwritten signature in black ink, appearing to read "John McKinsey", written over a horizontal line.

John A. McKinsey

Attorney for Applicant

CARLSBAD ENERGY CENTER LLC

EXHIBIT A-1
APPLICANT'S TESTIMONY REGARDING AIR QUALITY

**Applicant's Testimony
Regarding
Final Staff Assessment Conditions of Certification
for
Air Quality**

Applicant's Witness: **Gary Rubenstein**

Date: **December 15, 2009**

Testimony:

Applicant request the following changes to Air Quality Conditions of Certification in order to correct minor errors and to ensure that the CEC CEC conditions mirror the San Diego Air Pollution Control District final determination of compliance.

FSA Condition of Certification AQ-18

This Condition of Certification reflects the SDAPCD FDOC Condition Number 18, which defines which combustion turbines are referred to as Turbine A and Turbine B. In the following markup of the FSA Conditions of Certification, the Applicant requests that this condition be revised to correct an apparent typographical error in the FSA regarding one of the SDAPCD permit application numbers.

FSA Condition of Certification AQ-20

This Condition of Certification defines low load gas turbine operation. For clarification purposes, the Applicant requests that the verification language for the Condition of Certification refer to the "gas turbine operating data" rather than the "engine operating data".

FSA Condition of Certification AQ-44

This Condition of Certification reflects the SDAPCD FDOC Condition Number 44, which limits annual emissions following the initial startup of the first gas turbine. In the following markup of the FSA Conditions of Certification, the Applicant requests that this condition be revised to make the condition consistent with the SDAPCD FDOC and clarify that these emission limits begin with the earlier of the initial startup dates of either gas turbine (this appears to be a typographical error in the FSA condition).

FSA Condition of Certification AQ-55

This Condition of Certification reflects the SDAPCD FDOC Condition Number 55, which requires the submittal of a plan regarding the exhaust stack source test ports. In the Condition of Certification an exhaust stack plan must be submitted at least 90 days prior to the construction of the gas turbine exhaust stacks. However, in the verification language this plan must be submitted at least 60 days prior to the installation of the stack ports and platform. In the following markup of the FSA Conditions of Certification, the Applicant requests that the verification language be revised to make the timing of the plan submittal consistent with the requirement in the Condition of Certification and the SDAPCD FDOC condition.

FSA Condition of Certification AQ-65

This Condition of Certification reflects the SDAPCD FDOC Condition Number 65, which requires the submittal of a Continuous Emission Monitoring (CEM) system protocol. In the Condition of Certification the CEM protocol must be submitted at least 90 days prior to the initial startup of each gas turbine. However, in the verification language this protocol must be submitted at least 90 days prior to the initial operation of the CEM system. In the following markup of the FSA Conditions of Certification, the Applicant requests that the verification language be revised to make the timing of the protocol submittal consistent with the requirement in the Condition of Certification and the SDAPCD FDOC condition.

FSA Condition of Certification AQ-83

This Condition of Certification reflects the SDAPCD FDOC Condition Number 83, which limits annual emissions of the existing Encina Boilers 1, 2, and 3 following the shakedown period of Turbine A. The condition includes a reference to emissions during boiler commissioning and low-load operation. The FDOC condition does not refer to boiler commissioning or low-load operation because the existing boilers will not undergo commissioning nor will they undergo low-load operation (since this is a term specific to a combustion turbine operating mode). In the following markup of the FSA Conditions of Certification, the Applicant requests that this condition be revised to make this condition consistent with the requirement in the SDAPCD FDOC condition.

In addition, in the following markup of the FSA Conditions of Certification, the Applicant requests that AQ-29, AQ-35, AQ-43, AQ-45, AQ-57, AQ-69, AQ-76, AQ-82, and AQ-90 be revised as proposed to correct apparent typographical errors. Applicant notes that simple typographical errors should also be corrected in Conditions of Certification AQ-19, AQ-64, AQ-75, AQ-87, and AQ-89.

Requested Changes to FSA Air Quality Conditions of Certification

AQ-18 Turbine A is the combustion turbine as described on Applications No. 985745 or No, 985747, as applicable, that first completes its shakedown period. If both turbines complete their shakedown period on the same date, then Turbine A is the turbine described on Application No. 985745. [Rules 20.1(c)(16) and 21]

AQ-29 When a combustion turbine is operating, the emission concentration of carbon monoxide (CO) shall not exceed 2.0 ppmvd corrected to 15 % oxygen, except during commissioning, low load operation, startup, shutdown, or tuning periods for that turbine. For purposes of determining compliance based on CEMS data, the following averaging periods calculated in accordance with the CEMS protocol shall apply;

AQ-35 For each rolling 30-day-unit-operating-day period, average emission concentration of oxides of nitrogen (NOx) for each turbine calculated as nitrogen dioxide (NO2) in parts per million by volume dry (ppmvd) corrected to 15% oxygen or, alternatively, as elected by the project owner, the average NOx emission rate in pounds per megawatt-hour (lb/MWh) shall not exceed an average emission limit calculated in accordance with 40 CFR Section 60.34804380(b)(3). The emission concentration and emission rate averages shall be calculated in accordance with 40 CFR Section 60.4380(b)(1). The average emission concentration limit and emission rate limit shall be based on an average of hourly emission limits over the 30-day-unit-operating-day period. The hourly emission concentration limit and emission rate limit shall be 15 ppmvd corrected to 15% oxygen and 0.43 lb/MWh, respectively, for clock hours when the combustion turbine load is equal to or greater than 156 megawatts at all times during the clock hour, respectively, and 96 ppmvd corrected to 15% oxygen and 4.7 lb/MWh for all other clock hours when the combustion turbine is operating, respectively. The averages shall exclude all clock hours occurring before the Initial Emission Source Test but shall include emissions during all other times that the equipment is operating including, but not limited to, emissions during low load operation, ...

AQ-43 The carbon monoxide (CO) emissions from each combustion turbine shall not exceed 3813 pounds per hour and total aggregate CO emissions from both combustion turbines combined shall not exceed 4627 pounds per hour measured over each 1-clock hour period. This emission limit shall apply during all times that one or both turbines are operating, including, but not limited to emissions during commissioning, low load operation, startup, shutdown, and tuning periods. [Rule 20.3(d)(2)(i)]

AQ-44 Beginning with the earlier of the initial startup dates for either combustion turbine, aggregate emissions of oxides of nitrogen (NOx), calculated as nitrogen dioxide (NO2); carbon monoxide (CO); volatile organic compounds (VOCs), calculated as methane; particulate matter less than or equal to 10 microns in

diameter (PM10); and oxides of sulfur (SOx), calculated as sulfur dioxide (SO2),...

AQ-45 For each calendar month, the project owner shall maintain records, as applicable, on a calendar monthly basis, of mass emissions during ~~the~~ each calendar month of NOx (calculated as NO2), CO, VOCs (calculated as methane), PM10, and SOx (calculated as SO2), ...

AQ-55 The exhaust stacks for each combustion turbine shall be equipped with source test ports and platforms to allow for the measurement and collection of stack gas samples consistent with all approved test protocols. The ports and platforms shall be constructed in accordance with District Method 3A, Figure 2, and approved by the District. Ninety days prior to construction of the turbine stacks the project owner shall provide to the District for written approval detailed plan drawings of the turbine stacks that show the sampling ports and demonstrate compliance with the requirements of this condition. [Rule 20]

Verification: The project owner shall submit to the CPM for review and District for approval a stack test port and platform plan at least **60 90** days before the **construction of the turbine stacks installation of the stack ports and platform.**

AQ-57 A renewal source test and a NOx and CO Relative Accuracy Test Audit (RATA) ~~test~~ shall be periodically conducted on each combustion turbine to demonstrate compliance with the NOx, CO, VOC, PM10, and ammonia emission standards of this permit and applicable relative accuracy requirements for the CEMS systems using District approved methods. The renewal source test and the NOx and CO RATAs shall be conducted in accordance with the applicable RATA frequency requirements of 40 CFR75, Appendix B, Sections 2.3.1 and 2.3.3. The renewal source test shall be conducted in accordance with a protocol complying with all the applicable requirements of the source test protocol for the Initial Emissions Source Test. [Rules 69.3, 69.3.1, and 20.3(d)(1) and 40 CFR Part 60 Subpart KKKK, and 40 CFR Part 75]

AQ-65 No later than 90 calendar days prior to initial startup of each combustion turbine, the project owner shall submit a CEMS protocol to the District, for written approval that shows how the CEMS will be able to meet all District monitoring requirements. [Rules 69.3, 69.3.1, and 20.3(d)(1) and 40 CFR Part 60 Subpart KKKK, and 40 CFR Part 75]

Verification: The project owner shall submit to the CPM for review and the District for approval a CEMS operating protocol at least 90 days prior to the **initial startup of each combustion turbine operation the CEMS.**

AQ-69 The CEMS shall be in operation in accordance with the District approved CEMS protocol at all times when the turbine is in operation a copy of the District approved CEMS monitoring protocol shall be maintained on site and made

available to District personnel upon request. [Rules 69.3, 69.3.1, and 20.3(d)(1) and 40 CFR Part 60 Subpart KKKK, and 40 CFR Part 75]

AQ-76 ...The values of these operational characteristics shall be recorded each unit operating minute. The monitors shall be installed, calibrated, and maintained in accordance with a turbine operation monitoring protocol, which may be part of the CEMS protocol, approved by the District, which shall include any relevant calculation methodologies. The monitors shall be in full operation at all times when the combustion turbine is in operation. Calibration records for the continuous monitors shall be maintained on site and made available to the District upon request. [Rules 69.3, 69.3.1, and 20.3(d)(1) and 40 CFR Part 60 Subpart KKKK, and 40 CFR Part 75]

AQ-82 ...The aggregate emissions of each pollutant shall include emissions during all times that the equipment is operating including, but not limited to, emissions during commissioning, low load operation, startup, shutdown, and tuning periods. This condition ~~will~~shall not apply on and after the date Turbine B completes its shakedown period. [Rules 20.3(d)(3), 20.3(d)(8) and 21]

AQ-83...The aggregate emissions of each pollutant shall include emissions during all times that the equipment is operating including, but not limited to, emissions during ~~commissioning, low load operation~~, startup, shutdown, and tuning periods. [Rules 20.3(d)(3), 20.3(d)(8) and 21]

AQ-90 The engine shall be EPA certified to the 2009 model year or later requirements for emergency fire pump engines of 40 CFR Part 60 Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. [Rule 20.3(d)(1), 40 CFR Part 60 Subpart IIII, and 40 CFR Part 63 Subpart ZZZZ]

EXHIBIT A-2
APPLICANT'S TESTIMONY REGARDING LAND USE

**Applicant's Testimony
Regarding
Final Staff Assessment Conditions of Certification
for
Land Use**

Applicant's Witness: **George Piantka**

Date: **December 15, 2009**

Testimony:

Applicant proposes the following revisions to Condition of Certification LAND-1 to provide certainty and clarity regarding the scope of the appraisal that might be required if project owner and the City of Carlsbad cannot reach agreement on the easement to be dedicated for the Coastal Rail Trail. Because the triggering reason for the easement, the Precise Development Plan, calls only for an easement within the confines of the property owned by project owner, the scope of the appraisal should be so confined also.

LAND-1 The project owner shall dedicate an easement for the Coastal Rail Trail within the boundaries of the overall Encina Power Station Precise Development Plan area in a location mutually agreed upon with the city of Carlsbad located west of the north/south AT&SF/North County Transit District Rail Corridor **within 180 days from the start of construction.**

If the project owner and the city of Carlsbad cannot reach agreement on the location of the easement (for example due to public safety and security reasons) the project owner shall provide funds to the city of Carlsbad for use in the development of the Coastal Rail Trail within the city of Carlsbad. The project owner shall provide funding to the city of Carlsbad for development of the Coastal Rail Trail as approved by the Compliance Project Manager (CPM) within 180 days of the start of construction. The amount and payment of funds will be determined by an independent appraisal of property within the boundaries of the Encina Power Station that would have been provided for a Coastal Rail Trail easement. The project owner shall select an appraiser for approval by the CPM and pay all costs associated with the appraisal.

Verification: Pursuant to the requirements of § 25529 of the Warren-Alquist Act, ~~the project owner shall provide proof of easement dedication or appraisal and payment to the City of Carlsbad within 180 days of the start of construction. dedicate the easement in a location mutually agreed upon with the city of Carlsbad, west of the north/south AT&SF/North County Transit District Rail Corridor, and approved by the Compliance Project Manager (CPM) in consultation with the city of Carlsbad.~~

~~If the project owner and the city of Carlsbad cannot reach agreement on the location of the easement the project owner west of the north/south AT&SF/North~~

~~County Transit District Rail Corridor within the boundaries of the Encina Power Station Precise Development Plan area (for example due to public safety and security reasons), the project owner shall provide funds to the city of Carlsbad for use in the development of the Coastal Rail Trail within the city of Carlsbad. The project owner shall provide funding to the city of Carlsbad for development of the Coastal Rail Trail as approved by the Compliance Project Manager (CPM) within 180 days of the start of construction. The amount and payment of funds will be determined by an independent appraisal conducted on available and comparable property on behalf of the city of Carlsbad for development of the Coastal Rail Trail. The project owner shall pay all costs associated with the appraisal. The project owner shall provide documentation to the CPM that the funds have been paid and that the easements will be purchased within three years of start of operation as compensation for CECP project impacts on public use within the Coastal Zone. The documentation also shall guarantee that the easement purchased would be located within the City of Carlsbad. The project owner shall provide to the CPM updates in the Annual Compliance Report on the status of easement purchase(s).~~

EXHIBIT A-3
APPLICANT'S TESTIMONY REGARDING VISUAL RESOURCES

**Applicant's Testimony
Regarding
Final Staff Assessment Conditions of Certification
for
Visual Resources**

Applicant's Witness: **Marsha Gale**

Date: **December 15, 2009**

Testimony:

Applicant requests changes to CEC Staff's proposed Condition of Certification VIS-5 proposed in the FSA. While Applicant appreciates VIS-5 is focused on ensuring that potential future I-5 widening by Caltrans does not create significant impacts. However, given the uncertainty of the timing and probability of any future I-5 widening however, VIS-5 needs to be flexible and dynamic. Currently, VIS-5 requires implementation of a mitigation plan no later than the start of project operation. VIS-5 should be revised to allow the mitigation plan to be submitted if and when the I-5 widening project is approved on a path that encroaches onto the CECP site and the land has been obtained from the project owner. Under those circumstances, applicant would implement the approved mitigation plan which would presumably include Caltrans' final plans for the widening adjacent to CECP.

VIS-5 In order to address potential cumulative visual impacts resulting from I-5 widening, the applicant shall maintain a permanent buffer zone, including the existing vegetative visual screening, on the eastern portion of the CECP site, between the existing NRG fence line and storage tank perimeter road. This measure shall be coordinated with Conditions of Certification LAND-1 and HAZ-8. The existing landscape screening within the buffer zone shall be maintained and enhanced per Condition of Certification VIS-2 after start of project construction. The buffer zone shall be kept available to maintain existing visual screening, accommodate future possible I-5 widening to the extent necessary, and to accommodate both future hazard protection features and visual screening.

In addition, the applicant shall work with Caltrans to develop a Mitigation Plan for accommodating the widening project while maintaining visual screening of the CECP to acceptable levels. This plan could include complete or partial avoidance of the CECP site, complete or partial berm retention or replacement, complete or partial retention of existing landscape screening, and replacement screening as needed. The objective of the plan shall be to accommodate the I-5 widening within the designated buffer zone to the extent that encroachment is unavoidable, while providing needed hazard protection and acceptable levels of visual screening of the power plant.

If construction of a new landscaped berm west of the existing berm and proposed future Caltrans right-of-way is determined to be the most feasible measure to

address potential cumulative impacts of the I-5 Widening Project, then design and construction of the new berm shall be implemented at the earliest feasible time, ~~and no later than start of project operation~~, in order to maximize growing time for trees planted on the new berm. Landscaping of a replacement berm shall include installation of large-container (24-inch box or larger, as needed), fast-growing evergreen trees in sufficient density to provide comparable or better visual screening of the CECP site than currently exists, within the shortest feasible period. Trees shall be selected and located so as to achieve substantial screening within a period of five years from start of project operation.

The plan shall, at a minimum, include the following components:

- A. a record of discussions, meetings and planning activities conducted with Caltrans;
- B. the conclusions of these coordination activities;
- C. a detailed Mitigation Plan providing plans, elevations, cross-sections or other details, including a detailed list of plants and container size, sufficient to fully convey how the objectives of effective visual screening of the CECP are to be achieved; and
- D. a proposed construction schedule.

Verification:

At the earliest feasible time, applicant shall coordinate with Caltrans to discuss specific hazard and visual mitigation strategies. Following publication of the I-5 Widening DEIS, applicant shall work with Caltrans to devise a specific Cumulative Impact Mitigation Plan for accommodating hazard protection and visual screening.

Following coordination and plan development with Caltrans, the project owner shall submit a draft of the Cumulative Impact Mitigation Plan to the City of Carlsbad for review and comment and to the CPM for review and approval. The project owner shall submit any required revisions within 30 days of notification by the CPM. The project owner shall not implement the plan until receiving approval from the CPM. After receiving approval, the project owner shall ~~complete~~ commence implementation of the Mitigation Plan at the earliest feasible opportunity, ~~but~~ and shall commence implementation not later than 180 days after plan approval. The project owner shall notify the CPM within seven days after implementing the approved plan that the plan is ready for inspection. Planting must be completed and approved by the CPM prior to start of project operation.

EXHIBIT A-4
APPLICANT'S TESTIMONY REGARDING TRAFFIC & TRANSPORTATION

**Applicant's Testimony
Regarding
Final Staff Assessment Conditions of Certification
for
Traffic and Transportation**

Applicant's Witness: **Robert C. Mason**

Date: **December 15, 2009**

Testimony:

FSA Condition of Certification TRANS-5 should be slightly modified.

Staff's testimony states, "[S]taff is proposing Condition of Certification TRANS 5, which would require that any road damaged by project construction be repaired to its original condition." The language of TRANS-5, however, states, "Following completion of project construction, the project owner shall repair any damage to roadways affected by construction activity...." The phrase "affected by construction activity" is ambiguous because it could be interpreted to mean any damage suffered during construction, however caused.

Applicant requests that the language of TRANS-5 be amended to clarify that the project owner shall be obligated to repair damage to roadways caused by construction activity.

TRANS-5: Following completion of project construction, the project owner shall repair any damage to roadways ~~affected~~ **caused** by construction activity along with the primary roadways identified in the traffic control plan for construction traffic to the road's pre-project construction condition. Prior to the start of construction, the project owner shall photograph, videotape, or digitally record images of the roadways that will be affected by pipeline construction and heavy construction traffic. The project owner shall provide the CPM and the city of Carlsbad with a copy of the images for the roadway segments under its jurisdiction. Also prior to start of construction, the project owner shall notify the city about the schedule for project construction. The purpose of this notification is to postpone any planned roadway resurfacing and/or improvement projects until after the project construction has taken place and to coordinate construction-related activities associated with other projects.

Verification: Within 30 days after completion of the redevelopment project, the project owner shall meet with the CPM and the city of Carlsbad to determine and receive approval for the actions necessary and schedule to complete the repair of identified sections of public roadways to original or as near-original condition as possible.

Following completion of any regional road improvements, the project owner shall provide to the CPM a letter from the city of Carlsbad if work occurred within its jurisdictional public right-of-way stating its satisfaction with the road improvements.

EXHIBIT A-5
APPLICANT'S TESTIMONY REGARDING WORKER SAFETY
AND FIRE PROTECTION

**Applicant's Testimony
Regarding
Final Staff Assessment Conditions of Certification
for
Worker Safety**

Applicant's Witness: **George Piantka**

Date: **December 15, 2009**

Testimony:

FSA Condition of Certification Worker Safety-8 specifies that two workers must be present at the site whenever the project is operating. Applicant believes that upon receiving an order to startup and deliver electricity to the grid (a dispatch order), that the project owner should be allowed to commence that start up remotely while personnel are sent to the site. To not allow this could delay availability of the units unnecessarily. Because CECP is designed to be a fast startup power plant capable of supporting variable renewable energy supplies or rapid increase in need or demand for electrical energy, such delays should be avoided. For these reasons, applicant requests the following addition to Worker Safety-8.

WORKER SAFETY-8 The project owner shall ensure that not less than two workers - two technical workers or one technical and one security staff - will be present on the site (the "bowl") at all times whenever the CECP is operating. **When units are dispatched from a shutdown condition, project owner shall send the two workers to the site while commencing startup and the two workers shall proceed directly to site.** The project owner shall prepare a plan describing the work force that shall be present on the power plant site (the "bowl"), their shifts, their duties, their training, the method(s) of real-time continuous communication with the control room they will have available, their enclosed stations (e.g., portable office building), and facilities for personal hygiene on the site, to the CPM for review and approval.

Verification: At least 60 days prior to the start of commercial operations, the project owner shall submit a copy of the staffing plan to the CPM for review and approval.

EXHIBIT A-6
APPLICANT'S TESTIMONY REGARDING CULTURAL RESOURCES

**Applicant's Testimony
Regarding
Final Staff Assessment Conditions of Certification
for
Cultural Resources**

Applicant's Witness: **Clint Helton**

Date: **December 15, 2009**

Testimony:

Condition of Certification CUL-6, as proposed in the FSA, requires the cultural resource monitor (CRM) to visit the site twice daily when there may be earth work within three feet of native soil. Hence, CUL-6 effectively requires that the CRM be onsite at least twice a day during an extended period of CECP's construction phase. CUL-6 also requires the Native American monitor also to be on site during earth moving - not just when the CRM determines that there is a potential for Native American resources to be affected. Thus, the result essentially requires monitoring full-time, instead of only when working in native soils. However, as noted in the FSA, "no specific areas of heritage or religious significance have been identified."

CUL-6 is also more restrictive than similar COCs for other recent CEC projects. For other projects, the CRM and the CPM have the ability to work together to determine when CRM monitoring and Native American monitoring is required. CUL-6 takes away the CRM professional ability to make resource protective determinations as to when monitoring is required and when it is not. CUL-6 therefore also substantially increases the cost of monitoring.

Based on the results of the cultural resources study, which indicates that no areas of heritage or religious significance exist within the project site, and the fact that the project is being conducted on highly disturbed soils and land, Applicant proposes the following revisions to **CUL-6** which tailor the monitoring to match the conditions and which have been successfully utilized in other projects.

CUL-6: The project owner shall ensure that the CRS, alternate CRS, or CRMs monitor full time all ground disturbance of native soils at the project site, along linear facilities and roads, and at parking and other ancillary areas, including wetlands mitigation areas, to ensure there are no impacts to undiscovered resources and to ensure that known resources are not impacted in an unanticipated manner.

~~The project owner shall ensure that the CRS, alternate CRS, or CRMs shall monitor ground disturbance, including tank removal and soil remediation, full time at the project site and linear facilities, and ground disturbance full time at laydown areas or other ancillary areas, to ensure there are no impacts to undiscovered resources and to ensure that known resources are not impacted in an unanticipated manner (discovery). Specifically, the CRS, alternate CRS, or CRMs shall monitor the ground disturbance, including tank removal and soil remediation, that reaches to within 3 feet of native soil~~

~~below the fill and all ground disturbance, including tank removal and soil remediation, in native soil. Whether or not archaeological monitoring is being conducted at project locations, twice daily, in the morning and afternoon, an archaeological monitor shall examine locations where machinery is disturbing fill soil to determine whether native soils might be disturbed. If disturbance is within 3 feet of native soil, full-time monitoring shall commence.~~

Full-time archaeological monitoring for this project shall be the archaeological monitoring of all earth-moving activities on the project site and laydown areas, including tank removal and soil remediation, for as long as the activities are ongoing. Full-time archaeological monitoring shall require at least one monitor ~~per excavation area~~ where machines **are actively disturbing** may disturb native soils. If an excavation area **or areas are** is too large for one monitor to effectively observe the soil removal, one or more additional monitors shall be retained to observe the area.

In the event that the CRS believes that the current level of monitoring is not appropriate in certain locations, a letter or e-mail detailing the justification for changing the level of monitoring shall be provided to the CPM for review and approval prior to any change in the level of monitoring.

If future geotechnical core borings are conducted for the project, they shall be monitored and the boring cores examined by a geoarchaeologist or qualified archaeologist for the presence of cultural material. If cultural material is identified, that information shall be reported to the CPM within 24 hours. Whether or not cultural material is identified, the results of the core examinations shall be provided in a report to the CPM.

In the event that the CRS determines that the current level of monitoring is not appropriate in certain locations, a letter or e-mail detailing the justification for changing the level of monitoring shall be provided to the CPM for review and approval prior to any change in the level of monitoring.

The research design in the CRMMP shall govern the collection, treatment, retention/disposal, and curation of any archaeological materials encountered.

On forms provided by the CPM, CRMs shall keep a daily log of any monitoring and other cultural resources activities and any instances of non-compliance with the Conditions and/or applicable LORS. From these logs, the CRS shall compile a monthly monitoring summary report to be included in the Monthly Compliance Report (MCR). If there are no monitoring activities, the summary report shall specify why monitoring has been suspended.

The CRS, at his or her discretion, or at the request of the CPM, may informally discuss cultural resources monitoring and mitigation activities with Energy Commission technical staff.

Cultural resources monitoring activities are the responsibility of the CRS. Any interference with monitoring activities, removal of a monitor from duties assigned by the CRS, or direction to a monitor to relocate monitoring activities by anyone other than the CRS shall be considered non-compliance with these Conditions.

Upon becoming aware of any incidents of non-compliance with the Conditions and/or applicable LORS, the CRS and/or the project owner shall notify the CPM by telephone or e-mail within 24 hours. The CRS shall also recommend corrective action to resolve the problem or achieve compliance with the Conditions. When the issue is resolved, the CRS shall write a report describing the issue, the resolution of the issue, and the effectiveness of the resolution measures. This report shall be provided in the next MCR for the review of the CPM.

The project owner shall obtain a Native American monitor to monitor ground disturbance in any areas where Native American artifacts are discovered in native soils. ~~A Native American monitor shall be obtained to monitor ground disturbance, including tank removal and soil remediation, in areas where excavations may extend into native soil.~~ Informational lists of concerned Native Americans and guidelines for monitoring shall be obtained from the Native American Heritage Commission. Preference in selecting a monitor shall be given to Native Americans with traditional ties to the area that shall be monitored. If efforts to obtain the services of a qualified Native American monitor are unsuccessful, the project owner shall immediately inform the CPM. The CPM will either identify potential monitors or will allow ground disturbance, including tank removal and soil remediation to proceed without a Native American monitor.

Verification:

1. At least 30 days prior to the start of ground disturbance, including tank removal and soil remediation, the CPM will provide to the CRS an electronic copy of a form to be used as a daily monitoring log. While monitoring is ongoing, the project owner shall include in each MCR a copy of the monthly summary report of cultural resources related monitoring prepared by the CRS.
2. Daily, the CRS shall provide a statement that "no cultural resources more than 50 years of age were discovered" to the CPM as an e-mail, or in some other form acceptable to the CPM. The statement shall also include information based on the twice daily observations of soils by the archaeological monitor and indicate the likelihood of disturbing native soils. If the CRS concludes that daily reporting is no longer necessary, a letter or e-mail providing a detailed justification for the decision to reduce or end daily reporting shall be provided to the CPM for review and approval at least 24 hours prior to reducing or ending daily reporting. At least 24 hours prior to implementing a proposed change in monitoring level, documentation justifying the change shall be submitted to the CPM for review and approval.
3. At least 24 hours prior to implementing a proposed change in monitoring level, documentation justifying the change shall be submitted to the CPM for review and approval.

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Cultural Resources

4. If geotechnical core borings are conducted and cultural material is identified by a geoarchaeologist or archaeologist, the CPM shall be notified within 24 hours. Within 30 days after the examination of the core borings is completed, the CRS shall provide a copy of the results of the core examinations in a report to the CPM.

EXHIBIT A-7
APPLICANT'S TESTIMONY REGARDING SOIL & WATER RESOURCES

**Applicant's Testimony
Regarding
Final Staff Assessment Conditions of Certification
for
Soils and Water Resources**

Applicant's Witness: **Robert Mason**

Date: **December 15, 2009**

Testimony:

1. CEC Staff's proposed Conditions of Certification SOIL&WATER-1 and SOIL&WATER-3 should be amended to remove the City of Carlsbad's Improper Approval Authority

CEC FSA proposed Conditions of Certification SOIL&WATER-1 and SOIL&WATER-3 require that the city of Carlsbad review and **approve** construction and industrial Storm Water Pollution Prevention Plans ("SWPPPs"). Such an obligation is inappropriate and very problematic because the City of Carlsbad should not be given approval authority over a thermal power plant greater than 50 megawatts in contravention of the Warren Alquist Act. Further, the City of Carlsbad is hostilely opposed to CECP and is interfering with and manipulating its city functions in an attempt to block or prevent CECP. For this reason the perhaps otherwise innocent involvement of the City of Carlsbad in the approval process of CECP could have a devastating effect on the project. It was for this very reason that the Warren Alquist Act gives the CEC the exclusive permitting authority over thermal power plants of 50 MW or more.

For these reasons, Applicant requests the following changes to SOIL&WATER-1 and SOIL&WATER-3.

SOIL&WATER-1: The project owner shall comply with the requirements of the San Diego County Municipal Storm Water Permit (Order R9-2007-0001, NPDES No CAS0108758) and City of Carlsbad (City) Municipal Code Title 15, Chapter 15.12. The project owner shall develop and implement a Tier 3 Construction Storm Water Pollution Prevention Plan (Construction SWPPP) for the construction of the CECP site, laydown and parking areas, and all linear facilities. The Tier 3 Construction SWPPP shall be ~~reviewed and approved by~~ **submitted to the City for review and comment and to the CPM for approval and shall** contain all of the elements required by the General Permit for Construction Activities (WQO-99-08-DQM), the Municipal Permit (Order R9-2007-0001), and the City's current Storm Water Standards Manual.

Verification: Prior to site mobilization, the project owner shall submit to the Compliance Project Manager (CPM) a copy of the Tier 3 Construction SWPPP that has been reviewed ~~and approved~~ by the City and retain a copy on site. The project owner shall submit to the CPM all copies of correspondence between the project owner and the City regarding the Tier 3 Construction SWPPP within 10

days of its receipt or submittal. This information shall include copies of the Notice of Intent and Notice of Termination submitted to the State Water Resources Control Board for enrollment under the NPDES General Permit for Construction Activities.

SOIL&WATER-3: The project owner shall comply with the requirements of the San Diego County Municipal Storm Water Permit (Order R9-2007-0001, NPDES No CAS0108758) and City of Carlsbad (City) Municipal Code Title 15, Chapter 15.12. The project owner shall develop and implement a Storm Water Pollution Prevention Plan (Industrial SWPPP) for the operation of CECP. The industrial SWPPP shall be reviewed and approved by submitted to the City for review and comment and to the CPM for review and approval and shall be prepared in accordance with the requirements of the NPDES General Permit for Industrial Activities (WQO-97-03-DQM) and the City's Storm Water Standards Manual.

Verification: Prior to commercial operation, the project owner shall submit the Industrial SWPPP to the City for review and comment and to the CPM for approval to the CPM a copy of the Industrial SWPPP and retain a copy on site.

The project owner shall submit to the CPM all copies of all correspondence between the project owner and the City regarding the Industrial SWPPP within 10 days of its receipt or submittal. This information shall include a copy of the Notice of Intent submitted to the State Water Resources Control Board for enrollment under the NPDES General Permit for Industrial Activity.

2. Proposed Condition SOIL&WATER-8 should be Modified to Recognize the Choice in Source of Water Supply Available to the Project

Applicant proposes revisions to Condition SOIL&WATER-8 to clarify that it is only applicable if CECP is constructed for and relies upon recycled water as its water supply. Should CECP be designed for and use purified ocean water then not recycled water agreement is needed. Applicant also requests that the agreement have no term because the City of Carlsbad has indicated that it does not enter to and does not specify the duration of the agreement as the City has previously indicated that it does not enter into contracts with its recycled water customers.

Pursuant to the above discussion, Applicant requests the following changes to SOIL&WATER-8.

SOIL&WATER-8: If project owner relies on recycled water for the CECP water supply, the then project owner shall provide the CPM ~~two copies~~ a copy of ~~the~~ an executed Recycled Water Purchase Agreement (agreement) with the recycled water producer and the City of Carlsbad (City) for the ~~long-term~~ supply ~~(30—35 years)~~ and delivery of tertiary treated recycled water to the CECP. ~~The~~ CECP shall not connect to the City's recycled water pipeline without ~~the~~ a final

agreement in place. The project owner shall comply with the requirements of Title 22 and Title 17 of the California Code of Regulations and section 13523 of the California Water Code.

Verification: No later than 180 days prior to the connection to the City's recycled water pipeline, the project owner shall submit a copy ~~two copies~~ of the executed agreement for the ~~long-term~~ supply and delivery of tertiary treated recycled water to the CECP. The agreement shall specify a maximum delivery rate of 840 gpm and shall specify all terms and costs for the delivery and use of recycled water by the CECP.

No later than 60 days prior to connection to the City's recycled water pipeline, the project owner shall submit to the CPM a copy of the Engineering Report and Cross Connection inspection and approval report from the California Department of Public Health and all water reuse requirements issued by the San Diego Regional Water Quality Control Board.

3. SOIL&WATER-2 should be Modified to Avoid Excessive Trucking of Reclaimed Water for Construction Purposes

In FSA Condition of Certification SOIL&WATER-2, the project owner is obligated to use non-potable water for construction uses that do not require potable water. CEC staff premises the appropriateness of this condition on the fact that non-potable water is available to the project; however, this is not accurate.. The City of Carlsbad is refusing to provide reclaimed water to the project on the grounds that it has no capacity and is also claiming to have an exclusive right to be the provider of reclaimed water within its boundaries. While applicant disagrees with both positions by the City of Carlsbad, the only other option would be to haul reclaimed water in trucks from at least six miles away, and act that would generate traffic, fuel consumption and emissions impacts that are not intended or expected under California water policy of minimizing use of potable water for non-potable uses.

CEC staff party assumes that the City of Carlsbad will provide reclaimed water and partly bases its advocacy for SOIL&WATER-2 upon the premises that reclaimed water available six miles away is "available" as a construction water source. CEC staff also suggests the use of ocean water.

Applicant agrees that non-potable needs should be met with non-potable water when feasible, but does not believe that trucking water from six miles away to the site is the lowest environmental impact choice. For these reasons, applicant seeks the following changes to SOIL&WATER-2.

SOIL&WATER-2: Potable water shall not be used for any construction activity that is suitable for non-potable water use **if a non-potable source of water is** available at the site. Prior to **site mobilization** ~~the use of non-potable water for construction~~, the project owner shall submit to the CPM a Non-Potable

Construction Water Use Plan (plan) for the supply and use of non-potable water **in construction activities. The plan shall consider the use of ocean water and reclaimed water available at the site. The plan shall specify those construction activities that would use non-potable water and those construction activities that would use potable water.**

Verification: Prior to site mobilization, the project owner shall submit to the CPM for review and approval the **Non-Potable Construction Water Use Plan.** ~~for the procurement or on-site development of a non-potable construction water supply. Within the plan, the project owner shall specify those construction activities that would use non-potable water and those construction activities that would use potable water.~~ Within the Monthly Compliance Report, the project owner shall report the volume of potable and non-potable water used and **for** the construction activities it was used.

EXHIBIT B-1
DECLARATION OF CURTIS R. BASNETT

Declaration of
Curtis R. Basnett
Carlsbad Energy Center Project
(07-AFC-6)

I, Curtis R. Basnett, declare as follows:

1. I am presently employed by CH2M HILL under contract with Carlsbad Energy Center LLC to provide environmental consulting services for the Carlsbad Energy Center Project ("CECP").
2. A copy of my professional qualifications and experience is attached hereto as Exhibit A and incorporated by reference herein.
3. I caused to be prepared or prepared information for **Noise** in support of the Application for Certification ("AFC") for CECP. Such information was based on my independent analysis of data from reliable documents and sources and my professional experience and knowledge. Specifically, I prepared or caused to be prepared the following:
 - a. Evaluation of Pile Driving Induced Vibrations to Buried Sewer Pipeline
4. It is my professional opinion that the information provided to the California Energy Commission related to the CECP AFC proceeding is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony presented by me and, if called as a witness, could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

November 30, 2009
Date


NAME OF WITNESS

EXHIBIT A



Curt Basnett, G.E.

Senior Geotechnical Engineer

Operations Leader

Education

M.C.E., University of Florida, 1988

B.S., Civil Engineering, University of Florida, 1987

Professional Registrations

Registered Professional Engineer: Florida, Georgia, California, Nevada, Utah, and New Mexico

Registered Professional Geotechnical Engineer: California

Distinguishing Qualifications

- Over 20 years experience in a wide variety of geotechnical, geo-environmental, and materials engineering testing, design, construction, and design-build projects
- Geotechnical Operations Leader in CH2M HILL's Santa Ana, California office
- Knowledgeable and experienced in a wide variety of geotechnical software including UTEXAS 3.0, Slide, FB-Pier, Driven, Shaft, LPile, Settle3D, and GRLWEAP
- Published and presented papers on Karst Sinkhole Delineation, Compacted Clay Liner (CCL) Desiccation, Pile Capacity Evaluations from In Situ Tests, Foundation Stiffness of Large Pile Caps

Relevant Experience

Mr. Basnett is a geotechnical engineer specialist in the southern California office who has been with the company for more than 20 years. His wide breadth of experience includes field and laboratory soil testing, static and dynamic pile load testing, field explorations, in situ soil testing and sampling, landfill siting and design, seismic evaluations, embankment, retaining structures, and foundation design. He has served as a geotechnical design manager for projects involving energy facilities, embankment design for wastewater and spoil retention works; retaining/tie-back/MSE wall designs; slope stability evaluations for earthen dikes; embankments and fills; preloads; and deep and shallow foundation designs for energy facilities, port, harbor, water/wastewater, and highway projects including many bridge structures. Specific energy facility projects Mr. Basnett has managed include the following:

Representative Projects

Carlsbad Energy Center Project, San Diego, California, 2007-2009.

Authored noise section of California Energy Commission Application for Certification for the construction of a combined-cycle facility consisting of two natural-gas-fired turbines, heat recovery steam generators, steam turbine generators, and associated equipment.

Chula Vista Energy Upgrade Project, MMC Energy; San Diego County, California, 2007

Mr. Basnett provided guidance and senior quality control review for the geological resources section of the Application-for-Certification (AOC) for this facility. He also provided senior review of the geologic

and foundation design criteria developed by CH2M HILL engineering staff, which was included with the AOC.

Calpine Fontana Energy Center (FEC) Project, Fontana, California, 2007

Ivanpah Bright Source Energy Project, Ivanpah Dry Lake, San Bernardino County, California, 2007

Mr. Basnett provided preparation guidance and senior quality control review for the geological resources section of the Application-for-Certification (AOC) for these facilities.

Vernon Power Plant, Vernon, California, 2005, 2006

Located near Los Angeles, California, CH2M HILL completed the preliminary geotechnical design investigation and report for this proposed 610-megawatt cogeneration facility in support for the Application for Certification (AFC) permitting process. Mr. Basnett provided guidance and senior quality control review of the geotechnical preliminary design of the project.

Payson Power, Payson, Utah, 2003

Mr. Basnett provided geotechnical design and construction support for this 145 megawatt combined cycle power plant. This included developing contract documents for the pile foundations including dynamic testing, surcharge specifications incorporating wick drains and drainage blanket, and geotechnical analyses including stiffness formulation for the pile foundations. Construction support included review of surcharge settlement data and release for construction recommendations for the proposed shallow foundation for the cooling tower facility.

GenPower Anderson, Anderson, South Carolina, 2001

Mr. Basnett provided civil and geotechnical engineering design management for this proposed 640-megawatt, combined-cycle project in South Carolina. Mr. Basnett led the geotechnical related analyses and designs for the facility, which included deep and shallow foundations, pavement, earthwork, and retaining walls. He also assisted with permitting and prepared the final contract documents related to the civil design of this 146 acre site.

Environmental Assessment, Confidential Client, Southern California, 1996

Mr. Basnett served as field team leader and site safety coordinator for an environmental assessment involving a major power utility customer in Southern California. Responsibilities included assisting with the Phase 1 environmental investigation, interpreting and organizing large amounts of historical data, coordinating and leading the field team through the Phase 2 subsurface environmental exploration of three electric power generating stations, and report writing and preparation.

Orlando CoGen Limited, L.P., Air Products, Orlando, Florida, 1992

CH2M HILL planned and conducted the geotechnical exploration for this 120-megawatt cogeneration unit in Florida. Unique challenge of this project included properly positioning facilities on a very compact site of 4 acres outside the influence zone of an active sink-hole. CH2M HILL mapped the location and size of the sink-hole, which included the use of ground penetrating radar and cone penetration testing. Mr. Basnett conducted the field investigations, completed engineering design, and prepared the geotechnical design report, which was enthusiastically received by the client, Air Products Inc.

EXHIBIT B-2
DECLARATION OF MARK BASTASCH

Declaration of
Mark Bastasch
Carlsbad Energy Center Project
(07-AFC-6)

I, Mark Bastasch, declare as follows:

1. I am presently employed by CH2M HILL under contract with Carlsbad Energy Center LLC to provide environmental consulting services for the Carlsbad Energy Center Project ("CECP").
2. A copy of my professional qualifications and experience is attached hereto as Exhibit A and incorporated by reference herein.
3. I caused to be prepared or prepared information for **Noise** in support of the Application for Certification ("AFC") for CECP. Such information was based on my independent analysis of data from reliable documents and sources and my professional experience and knowledge. Specifically, I prepared or caused to be prepared the following:
 - a. AFC Noise Section 5.7
 - b. Project Enhancement and Refinement Noise Section 5.7
 - c. Data Responses to City of Carlsbad Data Requests, Set 1A, #55
4. It is my professional opinion that the information provided to the California Energy Commission related to the CECP AFC proceeding is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony presented by me and, if called as a witness, could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

12/03/2009
Date

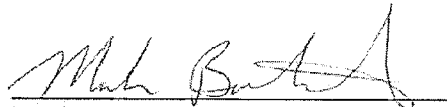

Mark Bastasch

EXHIBIT A

Mark Bastasch, P.E., I.N.C.E.

Noise Task Lead

Education

M.S., Environmental Engineering
B.S. (cum laude), Environmental Engineering

Professional Registrations

Registered Acoustical Engineer: Oregon (No. 58990PE)
Professional Environmental Engineer: Oregon (No. 58990PE)
Professional Civil Engineer: Oregon, 1999 (No. 58990PE)
Certified Water Rights Examiner: Oregon, 2000 (No. 58990WRE)

Distinguishing Qualifications

- Has prepared acoustical analysis or expert testimony for more than 15,000 megawatts (MW) from gas-fired facilities (primarily in California) and more than 5,000 MW from wind generation facilities nationwide
- Specializes in industrial noise measurements, modeling and control for power, industrial, and transportation clients
- Has prepared detailed noise models of numerous power facilities
- Has prepared comprehensive and cost effective compliance reports for several gas-fired power facilities demonstrating that permit conditions were satisfied

Relevant Experience

Mr. Bastasch is a registered acoustical, environmental, and civil engineer with more than 10 years experience conducting acoustical studies. Mr. Bastasch's acoustical experience includes preliminary siting studies, regulatory development and assessments, ambient noise measurements, industrial measurements for model development and compliance purposes, mitigation analysis, and modeling of industrial and transportation noise.

Representative Projects

Carlsbad Energy Center Project. Authored noise section of California Energy Commission Application for Certification for the construction of a combined-cycle facility consisting of two natural-gas-fired turbines, heat recovery steam generators, steam turbine generators, and associated equipment.

GWF Energy Tracy Combined Cycle Conversion Project. Authored noise section of California Energy Commission Application for Certification for the conversion of an existing peaking plant to a combined-cycle baseload facility consisting of two natural-gas-fired turbines, fired heat recovery steam generators, steam turbine generator, and associated equipment.

Mark Bastasch, P.E., I.N.C.E.

GWF Energy Hanford and Henrietta Combined Cycle Conversion Projects. Authored noise section of California Energy Commission Application for Certification for the conversion of two existing peaking plants to combined-cycle baseload facilities. The combined cycle facilities included two natural-gas-fired turbines, fired heat recovery steam generators, steam turbine generator, and associated equipment.

Ivanpah Solar Electric Generating System AFC. Authored noise section of California Energy Commission Application for Certification. Successfully worked with CEC staff to streamline noise analysis and eliminate unnecessary field studies given remote project site and lack of noise sensitive receptors.

Licensing and Permitting for San Francisco Electric Reliability Project (SFERP) for San Francisco Public Utilities Commission. Noise task lead for this controversial power plant. The SFPUC proposed to develop a 145-MW simple-cycle plant in southeast San Francisco, using three LM 6000 turbines. Although construction of another power plant in southeast San Francisco was controversial, it was licensed by the CEC. The plant would be located two blocks south of the existing Portrero Power Plant. Major issues included remediation of the power plant site (contaminated fill); Air Quality mitigation measures; water supply; Environmental Justice; and the need for in-city generation.

Walnut Energy Center, Turlock Irrigation District, Turlock, California. Acoustical technical lead for a combined cycle power plant. Tasks included evaluating and measuring background noise levels; development of detailed noise model, comparison of expected noise levels with the City of Turlock, County of Stanislaus, and the California Energy Commission's (CEC) noise guidelines; preparing Application for Certification and subsequent amendments submitted to the CEC; regulatory negotiation; and review of Conditions of Certification. Additional tasks included development assistance with acoustical bid and guarantee specifications and independent analysis of manufacturer steam turbine generator enclosure.

Calpine GE LM6000 Peaker Program, Calpine Corporation, Dublin, California. Project manager and acoustical lead for Calpine's Peaker Program. Prepared California Environmental Quality Act level noise assessments for more than 10 LM6000-based peaking power plants located throughout northern California. Developed a flexible and streamlined program to accurately and quickly prepare acoustical assessment. Tasks included regulatory review and interpretation of city and county noise standards, ambient measurements and analysis, development of a standardized model that included several levels of optional mitigation and field verification at operating facilities, and regulatory negotiating.

Edison Mission Energy's GE LMS100 Peaking Facilities, Southern California. Acoustical technical lead for two simple cycle power facilities each utilizing 5 GE LMS100 combustion turbines in simple cycle. Tasks included evaluating and measuring background noise levels to determine and evaluate risk associated with potential CEC permit limits; extensive coordination with GE given limited available data resulting from short operating history of the LMS100 (these were the first LMS100 evaluated in California); preparing Application for Certification to the CEC. Additional tasks included development and review of acoustical bid and guarantee specifications for cooling towers, SCR, stack, transformers and other balance of plant equipment.

Mark Bastasch, P.E., I.N.C.E.

Tierra Energy, Eastshore Power Project, Hayward, California. The proposed facility would be a nominal 115.5 megawatt (MW) simple cycle power plant consisting of 14 Wärtsilä 20V34SG natural gas-fired reciprocating engine generators and associated equipment. As acoustical technical lead for this facility, tasks included evaluating and measuring background noise levels to determine potential CEC permit limits; preparing Application for Certification to the CEC. Review of available vendor data and commitments.

Pacific Gas & Electric, Humboldt Bay Repowering Project, Humboldt, California. The proposed facility will be a load following power plant consisting of 10 natural gas-fired Wärtsilä 18V50DF 16.3 megawatt (MW) reciprocating engine-generator sets and associated equipment with a combined nominal generating capacity of 163 MW. As acoustical permitting lead for this facility, tasks included evaluating and measuring background noise levels to determine and evaluate risk associated with potential CEC permit limits; preparation of Application for Certification to the CEC, conducting site tour with CEC's acoustical staff and review of existing EPC commitments.

EXHIBIT B-3
DECLARATION OF JAMES P. BUSHNELL

Declaration of
James P. Bushnell
Carlsbad Energy Center Project
(07-AFC-6)

I, James P. Bushnell, declare as follows:

1. I am presently employed by CH2M HILL under contract with Carlsbad Energy Center LLC to provide environmental consulting services for the Carlsbad Energy Center Project ("CECP").
2. A copy of my professional qualifications and experience is attached hereto as Exhibit A and incorporated by reference herein.
3. I caused to be prepared or prepared information for **Worker Health and Safety** in support of the Application for Certification ("AFC") for CECP. Such information was based on my independent analysis of data from reliable documents and sources and my professional experience and knowledge. Specifically, I prepared or caused to be prepared the following:
 - a. AFC Worker Health and Safety Section 5.16
 - b. Project Enhancement and Refinement Worker Health and Safety Section 5.16
 - c. Fire Risk and Emergency Response Assessment Report
 - d. Fire Code Compliance Table, CECP Fire/Emergency Site Access Routes and Related Correspondence to the City of Carlsbad
 - e. Supplemental Fire Risk Assessment
4. It is my professional opinion that the information provided to the California Energy Commission related to the CECP AFC proceeding is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony presented by me and, if called as a witness, could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

December 9, 2009

Date

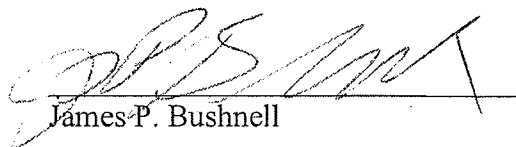

James P. Bushnell

EXHIBIT A

RESUME

James P. Bushnell, CIH, CSP
6808 37th Avenue Northeast
Seattle, Washington 98115
(206) 523-8658

Education: B.S.Ch.E, Chemical Engineering,
University of Washington, December 1981
49 Graduate credits in Industrial Hygiene and Safety
Environmental Health Department
University of Washington, 1986 - 1988

Special Training/Certifications:

- * American Board of Industrial Hygiene, Certified Industrial Hygienist #3872, expires 12/2001
- * Board of Certified Safety Professionals, Certified Safety Professional #14036
- * OSHA Health and Safety Training, 29 CFR 1910.120
- * First Aid & CPR Training

Experience:

8/97 to
present

CH2M HILL Inc.

777 108th Avenue, N.E.

Bellevue, WA 98004-5118

Regional Health and Safety Program Manager - In my current position I am responsible for directing the implementation of the Health and Safety Program in the West Region of CH2M HILL Environmental Services Business group. I supervise the professional and administrative staff in the region and help develop corporate health and safety policy. Construction, engineering and consulting services include wastewater infrastructure and environmental services.

9/90 to
7/97

OHM Remediation Services Corp - (RUST Remedial Services, Inc. (RRS) prior to 5/30/95)

83 South King Street, Suite 603

Seattle, WA 98104

Health and Safety Manager - I directly manage the Health and Safety programs for the Northwest District of OHM and provide technical support for divisions of OHM from Colorado and Northern California to Alaska. I hire and supervise project level professional staff to carry out the programs. Programs include safety, industrial hygiene, worker's compensation, training, accident investigation, safety and environmental compliance, medical surveillance, bloodborne pathogen, and confined space entry programs. OHM performs large and small-scale remediation projects ranging from major demolition of contaminated structures to small jobs involving laboratory wastes. I prepare health and safety plans, including the requirements of OSHA and WISHA, plus monitoring and managing the environmental compliance aspects of major projects. In fulfillment of these duties, I work closely with regulatory agencies to ensure compliance and work closely with the technical staff of OHM's clients to develop effective health and safety programs for large projects.

1/89 to
9/90

Diagnostic Engineering

6347 Seaview Avenue N.W.

Seattle, WA 98107

Senior Evaluator - I functioned as a senior evaluator dealing with asbestos and environmental consulting. My duties involved all aspects of asbestos project management including building surveys, abatement project design and specification writing, abatement monitoring and project documentation. I also prepared environmental evaluations of property for banks and investment funds and for the removal of underground storage tanks (USTs) for the U.S. Postal Service. As CIH on the West Coast, I administered the Company's internal health and safety programs. I have a working knowledge of CERCLA, RCRA, SARA, OSHA, WISHA and am familiar with regulations in all related areas.

Resume
James P. Bushnell, CIH, CSP

5/87 to
12/88 **RUST Remedial Services, Inc. (RRS)**
 20015 72nd Avenue South
 Kent, WA 98032

Health and Safety Manager - While on leave from graduate school I worked full time as the site safety officer for a large superfund site cleanup. During 1988 I worked part time and attended graduate school full time. My initial responsibility was developing the safety and health programs for the project which included water treatment operations and a laboratory. I was responsible for administering the overall Health and Safety program for the site, including all subcontractors. The main emphasis of this work was to manage and track all air monitoring activities at the site, which included both industrial hygiene air samples and environmental compliance air samples collected as part of the project community protection effort. I hired and supervised the industrial hygiene air monitoring staff and directed subcontractors who were hired to collect the perimeter air samples. Project responsibilities included:

- Writing and implementing health and safety plans for large superfund remediation projects,
- Community protection; public relations
- Toxicological evaluations of chemicals,
- Development and implementation of engineering and work practice controls for special situations,
- Conducting training, safety motivation, and
- Safety administration including medical surveillance, worker's compensation, accident statistics, cost control, right-to-know.

1/84 to
9/86 **U.S. Navy (civilian)**
 Puget Sound Naval Shipyard
 Occupational Safety and Health Office
 Bremerton, WA 98134

Chemical Engineer - My primary responsibility was Assistant Manager of the confined space entry program. My duties included maintaining the written program consistent with current regulations and work practices, providing training for technicians and providing assistance to shop management in safety and health-related issues. I also functioned as a program manager and was responsible for the technical supervision of technicians who performed the monitoring and sampling functions. My position required knowledge of safety and health issues covering the full range of activities at the naval shipyard which included heavy manufacturing, general metal work such as welding, metal fabrication, forge and foundry operations, radiological work, and chemical hazards associated with preservative coatings, rubber and synthetic foam operations and adhesives operations.

5/82 to
12/83 **U.S. Navy (civilian)**
 Mare Island Naval Shipyard
 Occupational Safety and Health Office
 Vallejo, CA

Chemical Engineer - My duties included technical review of designs, plans, methods and processes for determining the adequacy of OSH controls and to ensure compliance with governing policies and regulations. I coordinated the audits and reviews of the safety and health program for the shipyard. I was also involved in developing a hazard abatement tracking system to inform managers of the status of abatement items under their control. I was involved in assisting shop management to recognize and control safety and health problems in their areas.

References: References include all past supervisors. References are available upon request.

Affiliations:

- * American Industrial Hygiene Association (AIHA), Member
- * American Board of Industrial Hygiene, Diplomat
- * Board of Certified Safety Professionals

Resume
James P. Bushnell, CIH, CSP

SELECT PROJECT EXPERIENCE

Western Processing Superfund Site Kent, WA 1987	A large excavation and removal operation with construction and operation of an on-site water treatment plant and laboratory for site sample analysis. The western processing facility had been a recycler of hazardous materials and contamination included halogenated and non-halogenated solvent, metals, paints pigments, and PCBs.
Federated Department Stores Various Locations 1989-1990	Various projects involving initial sampling, investigation, specification writing, bidding and project oversight for asbestos removal projects in major department stores. Projects for this client included all phases of asbestos project management and included working in stores which were still open for business.
Weyerhaeuser Longview, WA 1990	This project included the demolition and excavation of the mercury cell room at the WEYCO chemical plant in Longview. A majority of this work was performed in "level B" protection. Work on this project included extensive air monitoring and biological monitoring (24 hour urine samples) of workers, and the attendant safety hazards associated with building demolition.
Bergsoe Metals St. Helens, OR 1990-1993	This project included most of the contracts for cleaning and dismantling the process equipment from an inactive secondary lead smelter. The smelter was built in the early 1980s and work was performed for U.S. Bank after Bergsoe went bankrupt. Project tasks included hauling a slag debris pile off site for disposal, dismantling and removing the 175 foot stack, bag house, blast furnace, refinery kettles and other process equipment, cleaning the inside of the building (approx. 4 acres total area), removing the site road, and screening debris. All work was done under the lead standard with other contaminants including asbestos and carbon monoxide being significant hazards.
ALCOA Vancouver, WA 1991, 1994, 1995	Projects included a large hog and haul of alumina and pot liner material. This material had significant amounts of ammonia and required full face level C protection. Other projects include the removal of a sludge pond and various dismantling of PCB contaminated equipment.
Rhone-Poulenc Portland, OR 1990-91	Demolition, dismantling and off site disposal and recycling of a pesticide manufacturing plant. The plant had manufactured organochlorine pesticides.
Marshall/Boulder Landfill Boulder, CO 1992-93	This project included building a water collection system, and French drains around a landfill outside Boulder, CO. A water treatment plant was designed and built to treat water contaminated with chlorinated solvents and heavy metals.
Selma Pressure Treat Superfund Site USACE Selma, CA 1993-94	This project included excavating soils contaminated with arsenic, pentachlorophenol and various by products of a wood preserving operation. The material was stabilized on-site and was placed in a large impoundment buried approximately 25 feet in the ground at the site. This project included the operation of process equipment in addition to the heavy equipment associated with excavation operations.
Sharon Steel Superfund Site - United States Bureau of Reclamation West Jordan, UT 1993-95	This project involved the excavation of the top 2-4 feet of soil from approximately 150 residences. The yards had become contaminated with lead from the nearby non-ferrous metal refinery adjacent to the properties. The work included many diffuse activities including excavation and landscaping all the properties. The safety management on this project was particularly problematic due to the large amount of hand work and unique situations presented.
Pueblo Depot Activity USACE -TERC I Pueblo, CO 1994,95	This project was the first work order for the TERC I contract. The project included constructing a water collection system and water treatment plant for the activity land fill. Contaminants include chlorinated solvents.

Resume
James P. Bushnell, CIH, CSP

Summitville Mine Superfund Project Bureau of Reclamation South Fork, CO 1994,95	This project involved the hauling of approx. 3 million cubic yards of mine crosby material from the bottom of an alpine valley to the side of the mountain where the material had been removed. This project took place between 11,500 and 12,500 feet in elevation in the Rocky Mountains. The elevation was a significant factor from an operational and safety standpoint. The mine site is being restored and the valley is being rebuilt to its original condition. The mine tailings pile is a significant source of cyanide into the local stream and downstream into the Rio Grande River.
Northwest Transformer Puget Power Everson, WA 1993,94	This project involved a deep and technical excavation of PCB contaminated soil and the demolition of 2 PCB contaminated structures at two different locations. On significant factor in this project was one location in the center of town and the need to shore existing structures to excavate the soil from underneath.
Bunker Hill Superfund Site - Kellogg, ID	This project included the demolition of a power plant and an ore concentrates processing building, related asbestos removal and hot spot excavation. This project required a substantial amount of H&S involvement when our asbestos removal sub-contractor was cited by the EPA and I had to rewrite several of the asbestos related work plans before the enforcement branch of the EPA was satisfied that work could resume.
Umatilla Army Depot Hermiston, OR 1995 -	This project was a turnkey project that included sampling and developing a stabilization formulation for soil contaminated with metals, pesticides and ordnance and explosive waste. The health and safety plan was expanded to include the additional requirements of working with potentially explosive materials.
Montecello Mill Tailings Montecello, UT 1995 -	This project includes the construction of a RCRA landfill cell on-site and filling the cell with the mill tailings. The contamination is very low level radioactivity and metal contamination. This project is primarily a large earth moving project with the excavation of approximately 1.8 million yards of material and the hauling of an additional 2.3 million yards of material back into the landfill cell.
Portland Cement Superfund Site Salt Lake City, UT 1995 -1997	This project involves the transportation, by rail, of Cement Kiln Dust, that was left on the site by the Portland Cement Co. The main hazard of this project is the high pH of the material and the extensive dust control efforts required to keep a high rate of production to move the material. The surface waters have a pH of up to 13 after a rain event.

EXHIBIT B-4
DECLARATION OF MARJORIE EISERT

Declaration of
Marjorie A. Eisert
Carlsbad Energy Center Project
(07-AFC-6)

I, Marjorie Eisert, declare as follows:

1. I am presently employed by CH2M HILL under contract with Carlsbad Energy Center LLC to provide environmental consulting services for the Carlsbad Energy Center Project ("CECP").
2. A copy of my professional qualifications and experience is attached hereto as Exhibit A and incorporated by reference herein.
3. I caused to be prepared or prepared information for **Biological Resources** in support of the Application for Certification ("AFC") for CECP. Such information was based on my independent analysis of data from reliable documents and sources and my professional experience and knowledge. Specifically, I prepared or caused to be prepared the:
 - a. AFC Biological Resources Section 5.2
 - b. Data Adequacy Supplement A
 - c. Project Enhancement and Refinement Section 5.2;
 - d. Data Responses to the Energy Commission Staff Data Request, Set 3B, #84-86 and 94
 - e. Applicant's Record of Conversation with California Department of Fish & Game
4. It is my professional opinion that the information provided to the California Energy Commission related to the CECP AFC proceeding is valid and accurate with respect to the issues addressed herein.
5. I am personally familiar with the facts and conclusions related in the testimony presented by me and, if called as a witness, could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

12/15/09
Date

Marjorie Eisert
Marjorie Eisert

EXHIBIT A

Marjorie Eisert

Biological Resources Senior Technical Review

Education

B.S., Wildlife and Fisheries Biology

Relevant Experience

Ms. Eisert is a senior wildlife biologist with over 20 years of experience working on applied environmental problems in terrestrial habitats. Ms. Eisert's duties include performing general and special-status wildlife surveys and census techniques, and she has conducted studies in California, Nevada, Oregon, Washington, and Alaska. Her expertise includes knowledge of invertebrate and vertebrate natural history; handling and restraint of herpetile, bird, and mammalian species; experience with vertebrate and invertebrate collection methodologies and techniques; and identification of herpetile, bird, and mammalian species.

Representative Projects

Project Biologist, Carlsbad Energy Center Project, Carlsbad, California. Provided senior biological oversight for the AFC Biological Resources section for the construction of a combined-cycle facility consisting of two natural-gas-fired turbines, heat recovery steam generators, steam turbine generators, and associated equipment.

Project Biologist, GWF Energy Tracy Combined Cycle Conversion Project, San Joaquin County, California. Provided senior biological oversight for the AFC Biological Resources section for the conversion of an existing peaking plant to a combined-cycle baseload facility consisting of two natural-gas-fired turbines, fired heat recovery steam generators, steam turbine generator, and associated equipment.

- **Task Manager, Application for Certification (AFC) of Walnut Energy Center, City of Industry, California.** Task Manager for biological resource impact analysis and document section of AFC. Performed threatened and endangered species surveys, literature search, and wildlife impact evaluation for proposed electric power plant, recycled water supply line, natural gas pipeline route, and electric transmission line connections. Prepared the biological resources section of the AFC and performed informal consultations for sensitive biological resources with U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, and the California Department of Fish and Game.
- **Task Manager/Project Biologist, Site Certification, COB Energy Facility, Oregon.** Evaluated ecological resources including wetlands and threatened and endangered species for the development of a 46-acre project site and associated transmission, gas, and water utility lines. Conducted bald eagle and amphibian surveys as well as general reconnaissance of the project vicinity. Prepared the biological resources sections of the site certification application and coordinated Section 7 consultation with the U.S. Fish and Wildlife Service as well as consult with the Oregon Department of Fish and Game and the Bureau of Land Management.

- **Senior Biologist, Application for Certification (AFC) of Sun Valley Energy Center, Riverside County, California.** Performed threatened and endangered species surveys and wildlife impact evaluation for proposed electric power plant, recycled water supply line, natural gas pipeline route, and electric transmission line connections. Provided senior biological review for the biological resources section of the AFC.
- **Senior Biologist, Application for Certification (AFC) of City of Vernon, California.** Provide senior biological review of the biological resource impact analysis and document section of AFC. Coordinated consultation with resource agencies (U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, and the California Department of Fish and Game) and the project biologist.

Project Manager, Travis Air Force Base On-call Biological Services. Project management. For 3 years, Ms. Eisert has been the project manager of the on-call services contract for Travis Air Force Base. She provides oversight and technical guidance for a broad range of services for more than 9 current Base projects including threatened and endangered species surveys, cultural resources surveys and historic property surveys, Integrated Natural Resources Management Plan and Integrated Cultural Resources Management Plan development, Urban Forestry Management Plan development, and Section 7 consultation with the USFWS and Section 404 Permitting with the USACE. Responsible for managing budget, schedule, staffing, and quality of deliverables for these projects ranging from less than \$20,000 to over \$200,000. Ms. Eisert provides senior review for preparation of CEQA/NEPA documents, Biological Assessments and Section 7 consultations with FWS, and provides strategy and support for Travis AFB's current natural resource management and permitting efforts with numerous agencies, including USFWS, RWQCB, SHPO, and USACE.

Project Manager, PG&E L406/L407 Yolo Pipeline. Project manager for environmental services throughout planning, design, and construction of a 44-mile natural gas pipeline from the town of Yolo to the City of Roseville. Managing preparation of environmental documents for CEQA preparation by the State Lands commission; permitting including Regional Water Quality Control Board, State Reclamation Board, and Section 7 consultation for the giant garter snake and vernal pool branchiopods; and USACE coordination under the Clean Water Act. Conducted resource analyses (biology, geology, land use) of several route alternatives. Ms. Eisert is working closely with PG&E's engineering, gas transmission, environmental planning, biology staff, and subcontractors to bring in all phases of this project successfully within their current time frames.

Field Team Leader, Confirmatory Sampling and Ecological Risk Assessment, Bolsa Chica Lowlands, Orange County, California. Field Team Leader for field investigations of surface water, sediment, surface and subsurface soil, and aquatic and terrestrial biota. Sample management responsibilities included implementation of an in-house sample tracking system and laboratory coordination for sample analysis and shipping. The focus of this ongoing project for the U.S. Fish and Wildlife Service is to conduct sampling and to perform an ecological risk assessment for the 1,200-acre Bolsa Chica Lowlands.

Project Manager, Biological Monitoring Program, Kesterson Reservoir, Central San Joaquin Valley, California. Manage and conduct bird surveys, San Joaquin kit fox surveys, small mammal trapping, invertebrate and plant sample collection as part of the ongoing

U.S. Bureau of Reclamation Biological Monitoring Program at Kesterson Reservoir. Present results of the monitoring in an annual report that is used to determine risks to wildlife and the success or failure of cleanup procedures at the Reservoir.

Project Biologist, Chevron Richmond Refinery, Richmond, California. Performed surveys of shorebirds nesting in constructed wetlands at a constructed wetland at a Chevron refinery in Richmond. Conducted nest searches, monitoring of incubating eggs, collection of egg samples, and collection of fail-to-hatch and predated eggs. Data on selenium and mercury bioaccumulation were used with survey results to develop a management plan for the wetlands.

Project Biologist, Ecological Risk Assessment, Weapons Support Facility, Seal Beach, California. Collected mammal, fish, invertebrate, and plant samples for assessment of toxicity and exposure, and evaluation of potential stratum-specific risks to potential receptors.

Project Biologist, Ecological Risk Assessment, Marine Corps Base Camp Pendleton, California. Conducted bird surveys, small mammal trapping, invertebrate and plant sample collections to identify potential contaminant exposure routes. Conducted endangered species surveys for a biological assessment for site remediation on the base. Assisted in the preparation of a basewide ecological risk assessment for selected sites at Marine Corps Base Camp Pendleton in California, including modeling food chain bioaccumulation of selected metals and pesticides, developing preliminary remediation goals for ecological receptors, and evaluating potential risks to plants, invertebrates, mamma

EXHIBIT B-5

DECLARATION OF MATTHEW FRANCK

Declaration of
Matthew Franck
Carlsbad Energy Center Project
(07-AFC-6)

I, Matthew Franck, declare as follows:

1. I am presently employed by CH2M HILL under contract with Carlsbad Energy Center LLC to provide environmental consulting services for the Carlsbad Energy Center Project ("CECP").
2. A copy of my professional qualifications and experience is attached hereto as Exhibit A and incorporated by reference herein.
3. I caused to be prepared or prepared information for **Water Resources** in support of the Application for Certification ("AFC") for CECP. Such information was based on my independent analysis of data from reliable documents and sources and my professional experience and knowledge. Specifically, I prepared or caused to be prepared the following:
 - a. AFC Water Resources Section 5.15
 - b. Project Enhancement and Refinement Section 5.15
 - c. Data Adequacy Supplement A
 - d. Data Responses to:
 - i. California Energy Commission ("CEC") Staff Data Requests, Set 1A, #37-51
 - ii. CEC Staff Data Requests, Set 3B, #117-118; 126; and 129-132
 - e. Site Preparation and Construction Stormwater Management and Pollution Prevention Plan
 - f. National Pollutant Discharge Elimination System Permit Application
4. It is my professional opinion that the information provided to the California Energy Commission related to the CECP AFC proceeding is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony presented by me and, if called as a witness, could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

9 Dec. 09
Date

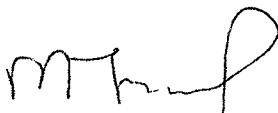

Matthew Franck

EXHIBIT A

Matthew M Franck
Environmental Planner
Education

Bachelor of Science, Environmental Policy Analysis and Planning, University of California at Davis, 1989

Distinguishing Qualifications

- Conducted environmental studies throughout California, Oregon, and Washington

Relevant Experience

Mr. Franck is an environmental planner with CH2M HILL. He has 15 years of experience in managing and writing environmental impact assessment documents in compliance with NEPA and CEQA. He also coordinates local, state, and federal regulatory processes. Mr. Franck's education and multidisciplinary experience, as well as his expertise in land use and resource planning, provide a solid background for evaluating complex environmental policy issues.

Representative Projects

Humboldt Bay Repowering Project, PG&E. Task Manager for Water Resources. Prepared Water Resources analysis for a project to repower the existing Humboldt Bay Power Plant south of Eureka, California, using ten natural gas powered reciprocating engine generators. Key water resources issues of concern included stormwater quality to an extended detention basin, process wastewater discharges to a municipal system, and the decrease in lagoon flows because of reduced use of the existing once-through cooling system.

Ivanpah Solar Electric Generating System, Bright Source Energy, Inc. Senior Technical Reviewer for Water Resources. Assisted in the preparation of a Water Resources analysis as a Senior Technical Reviewer. Project is a concentrated solar thermal facility proposed on 1,843 acres of land in the Mojave Desert. Key water resources issues of concern included availability of groundwater for the thermal facility and the disturbance to hydrology from the large construction site.

Carlsbad Energy Center Project, NRG, Inc. Task Manager for Water Resources. Prepared Water Resources analysis for a project to repower the existing Encina Power Station in Carlsbad, California, using natural gas turbines. Project involved the use of reclaimed water from the nearby wastewater treatment plant, with an alternative source to use desalinated seawater. Key issues included marine impacts from seawater intake, brine disposal, and the capacity of the existing reclaimed water distribution system.

Lompoc Wind Energy Project, Pacific Renewable Energy Generation, LLC. Task Manager for Water Resources. Prepared Water Resources analysis for a project to install 60-80 wind turbines and ancillary facilities on 2,950 acres in Santa Barbara County, California. Key water resources issues of concern included disturbance to onsite water resources from the large extent of construction activities, stormwater quality control, and development of an onsite facilities (including a well and septic system) for the operations units.

Eastshore Energy Project, Tierra Energy, Inc. Task Manager for Water Resources. Prepared Water Resources analysis for a new natural gas power plant in Hayward, California, using fourteen reciprocating engine generators. Key water resources issues of concern included the development of structural features for onsite stormwater quality control, and process wastewater discharges to a municipal system.

San Francisco Electric Reliability Project, Public Utilities District for the City and County of San Francisco, California. Task Manager for the preparation of the Water Resources section of this Application for Certification, a California Energy Commission process that is functionally equivalent to CEQA. The CEQA-equivalent evaluation is focuses on water, wastewater, and stormwater generation and use by the proposed facility in the context of Citywide compliance with the federal Clean Water Act and state Porter-Cologne Water Quality Control Act. Work efforts included testimony at evidentiary hearings.

Vernon Power Plant, City of Vernon. Task Manager for Water Resources. Prepared Water Resources analysis for a new natural gas power plant in Vernon, California, using three gas-fired turbines and one steam turbine. The project would redevelop an existing industrial site in this highly industrial community. Key water resources issues of concern included calculating drainage credits based on changes to the existing site drainage patterns, stormwater quality control during construction and operation, availability of recycled water, and the quantity and quality of wastewater discharges.

Westley-Marshall Substation and Transmission Line Project, Turlock Irrigation District. Task Manager for Water Resources. Prepared Water Resources analysis for a transmission line project (approximately 12 miles) in rural Stanislaus County, California. The project also involved nine potential substation sites. Key water resources issues of concern included floodplain risks and stormwater quality control during construction.

South Bay Replacement Project, LS Power Generation, LLC. Task Manager for Water Resources. Prepared Water Resources analysis for a project to repower the existing South Bay Power Plant in Chula Vista, California, using two natural gas turbines and one steam turbine. Project would result in the abandonment of the existing once-through cooling system used at the existing power plant. Key water resources issues of concern included stormwater quality during construction and plant operations and wastewater discharges (quantity and quality).

Chula Vista Energy Upgrade Project, MMC Energy, Inc. Senior Technical Reviewer for Water Resources. Assisted in the preparation of a Water Resources analysis as a Senior Technical Reviewer. Project would replace existing units with two newer, more efficient natural gas turbines. Work efforts included testimony at evidentiary hearings.

Critical Issues Review—Various Sites, Ramco Energy, Inc. Task Manager for Water Resources. Prepared water resources portion of Critical Issues Review report in support a Request for Offer by PG&E. The critical issues review covered various sites in Northern California and addressed critical water resources topics such as water supply availability and wastewater disposal capacity and discharge limitations.

Modesto Irrigation District Electric Generation Station, Modesto Irrigation District, Ripon, California. Task Manager for the preparation of the Water Resources section of this Small Power Plant Exemption, a California Energy Commission process that is functionally equivalent to CEQA. The CEQA-equivalent evaluation focused on water, wastewater, and stormwater generation and use by the proposed facility in compliance with the federal Clean Water Act and state Porter-Cologne Water Quality Control Act.

AFCs for Walnut Creek Energy Park and Sun Valley Energy Project, Edison Mission Energy, City of Industry/Romoland, California (200 to 2006). Provided support for two Applications for Certification before the California Energy Commission for

similarly designed 500-MW natural gas-fired peaking power plants using the GE LMS100 advanced gas turbine technology. These applications were prepared in parallel and were filed at the Energy Commission within one week of one another. The AFCs were filed in December of 2005 and the projects are scheduled to begin construction in 2007.

AFC for Roseville Energy Park, Roseville Electric, Roseville, California (2003 to 2005). Provided support for Application for Certification before the California Energy Commission for a 160-MW natural gas-fired power plant in Roseville, California.

Sacramento Regional Transit District, On-call Environmental Support Services, Sacramento, California. CH2M HILL is currently providing environmental support services to the Sacramento Regional Transit District (RT), including CEQA and NEPA documentation, environmental permits, and special studies. Since contract inception in 2005, CH2M HILL has completed eleven work orders under this on-call contract. Typical projects have included the following:

- Northeast Corridor Enhancements - RT is undertaking an extensive rehabilitation project to enhance services on its northeast (Watt/I-80) light rail corridor. CH2M HILL supported RT's effort by repackaging prior environmental documents into a concise Addendum, updating the Mitigation Monitoring Plan, updating wetlands, and cultural resources studies, and reconciling project phasing with required CEQA processes. In addition, CH2M HILL conducted detailed site assessment work (Phase 1 studies per ASTM standards) to support reconfiguring the Lumberjack Curve.
- Amtrak – Folsom Weekend Service. CH2M HILL provided detailed traffic studies to support environmental review for providing increased weekend service for RT's new light rail service to Folsom.
- Amtrak – Folsom Electrical Facilities – CH2M HILL conducted cultural resources studies to support electrical facilities upgrades on the K Street Mall, supporting use of a CEQA Categorical Exemption and avoiding more time-consuming processes.

• **Placer County Water Authority – Environmental Support for Bickford Tank, Loomis Area, California.** As part of an integrated project delivery team, CH2M HILL supported the design of PCWA's new Bickford Ranch water tank by providing CEQA document and site assessment services. CH2M HILL repackaged the adopted Bickford Ranch EIR into a concise, focused Mitigated Negative Declaration that evaluated the impacts of the changed project in the context of the prior EIR. In addition, CH2M HILL prepared a Phase 1 Environmental Site Assessment that summarized the potential for contamination of the environment and worker health and safety. Findings from both studies are being integrated with the overall design effort.

Placer County Water Agency, Environmental Support for Werner Tank, Ophir Area, California. As part of an integrated project delivery team, CH2M HILL is supporting the design of PCWA's new Werner Road water tank by provided CEQA and site assessment services. CH2M HILL prepared a Mitigated Negative Declaration to support the property acquisition phase, and is preparing a new CEQA document to address the impacts of the specific project. In addition, CH2M HILL prepared a Phase I Environmental Site Assessment to evaluate past contamination, and as a result prepared a Phase 2 study that included soil sampling and laboratory analysis. Resolving concerns associated with prior agricultural contamination required extensive coordination with the Department of Toxic Substances Control. Findings from all studies are being integrated with the overall design effort.

Environmental Documentation and Permitting Support, OMI-Thames Water, Stockton, California. Task Manager for environmental documentation and permitting

support for the contract operation of the City of Stockton's wastewater, water, and stormwater infrastructure. The major task in this support effort was the coordination of a contractor's preparation of an Environmental Impact Report under CEQA for the upgrade of the City's wastewater treatment plant in accordance with Clean Water Act requirements. Another major task was the preparation of an application to the U.S. Coast Guard for a new utility bridge crossing of the San Joaquin River, including a NEPA Environmental Assessment. The utility bridge project has also included extensive agency coordination with the National Marine Fisheries Service, U.S. Fish and Wildlife Service, California Department of Fish and Game, Central Valley Regional Water Quality Control Board, and state and local levee agencies.

North Delta Improvements Project California Department of Water Resources, Sacramento, California. Task Manager for the preparation of four resource evaluation sections for the North Delta Improvements Project EIR. The project involved a large combination of related actions near Walnut Grove, California, to improve the passage of floodwaters through a "bottleneck" in the Sacramento San Joaquin Bay-Delta System. Project elements included significant levee alterations, channel dredging, and an assortment of landside actions such as restoration of McCormack-Williamson Tract. Manage preparation of the Water Quality, Water Supply, Power, and Public Health and Safety sections, and wrote the Water Quality and Water Supply Sections. This work was conducted for DWR's lead consultant, Jones & Stokes.

South Delta Improvements Project, California Department of Water Resources and US Bureau of Reclamation, Sacramento, CA. Task Manager for the preparation of six resource evaluation sections for the South Delta Improvements Project EIS/EIR. The project involves: 1) increasing pumping from the State Water Project's Banks Pumping Plant, and 2) Installing four operable barriers in various waterways in the Sacramento – San Joaquin Delta. The SDIP project would allow additional water supply exports from the Delta while taking action (through operation of the barriers) to maintain and enhance water quality for agriculture use in the Southern Delta. Managed preparation of the Land and Water Use, Power Production and Energy, Socioeconomic Impacts, Recreation, Transportation and Navigation, and Public Services and Utilities sections. Lead author for the Land and Water Use and Power Production and Energy sections. This work was conducted for DWR's lead consultant, Jones & Stokes. Also currently assessing in the delivery of additional task related to the environmental permits for installation of the operable barriers, including the effectiveness of the Head of the Old River barrier.

Delta-Mendota Canal/California Aqueduct Intertie EIS, U.S. Bureau of Reclamation, Sacramento, California. Project Manager for preparation of the EIS for the proposed Intertie project. This project would enhance the flexibility and reliability of the Central Valley Project and State Water Project by building a connecting pipeline between the Delta Mendota Canal and the California Aqueduct. This EIS is being prepared as a result of litigation on a prior document, and will include enhanced analysis of water supply and fisheries impacts to bolster its defensibility under NEPA. Water supply and related impacts (including fisheries) are being quantitatively analyzed using the CALSIM 2 and DSM2 hydrodynamic models, which requires extensive coordination with other statewide water resources programs such as the Operations Criteria and Plan - and sensitivity to endangered species concerns (e.g., Delta smelt habitat and mortality). Because the Intertie process to use electricity generated by federal water projects, there has been extensive coordination with the Western Area Power Administration.

Downtown-Natomas-Airport Environmental Impact Statement/Environmental Impact Report, Sacramento Regional Transit District, California. Task Manager for the preparation of an Environmental Impact Statement/Environmental Impact Report for the development of light

rail facilities. The proposed light rail facility would run from Downtown Sacramento to Sacramento International Airport. Key issues of concern involve historic preservation in Downtown Sacramento; habitat, archeological, and recreation impacts in the American River Parkway, public safety impacts in developed neighborhoods, and nuisance issues associated with traffic and noise. The effort is being coordinated under the Federal Transit Administration's New Starts program.

Sacramento Valley Water Management Program, Northern California Water Agency, California. Task Manager for an Environmental Impact

Statement/Environmental Impact Report for the implementation of a Sacramento Valley-wide water management program. The purpose of the program is to meet water quality standards in the Sacramento-San Joaquin Bay-Delta by increasing water supply reliability in the Sacramento Valley, requiring a coordinated effort among approximately 25 stakeholders (mostly local water districts). The project involves the application of CALSIM2, a mass-balance hydrologic model that evaluates the movement of water throughout the Central Valley, including the effects of the federal Central Valley Project and the State Water Project.

Arden Parallel Force Main, Sacramento Regional County Sanitation District, Sacramento, California. Task Leader for the coordination of all environmental permit

activities for the construction of a 60-inch sewer force main in Sacramento County, most of which is located within the environmentally sensitive American River Parkway. Coordinated with permitting agencies including the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, California Department of Fish and Game, Central Valley Regional Water Quality Control Board, State Lands Commission, and the State Reclamation Board, as well as managing staff in wetland delineation and special-status species surveys. Also coordinated with the county's Department of Environmental Review and Assessment to ensure the completion of CEQA documentation for the project. Currently providing services during construction.

Ongoing Environmental Documentation and Permitting Support, OMI-Thames Water, Stockton, California. Task Manager for environmental documentation and

permitting support for the contract operation of the City of Stockton's wastewater, water, and stormwater infrastructure. To date, the major task in this support effort has been the coordination of a contractor's preparation of an Environmental Impact Report under CEQA for the upgrade of the City's wastewater treatment plant in accordance with Clean Water Act requirements. Another major task is the preparation of an application to the U.S. Coast Guard for a new utility bridge crossing of the San Joaquin River, including a NEPA Environmental Assessment. The utility bridge project has also included extensive agency coordination with the National Marine Fisheries Service, U.S. Fish and Wildlife Service, California Department of Fish and Game, Central Valley Regional Water Quality Control Board, and state and local levee agencies.

Conveyance of Refuge Water Supply – Mendota Wildlife Area Environmental Assessment/Initial Study, U.S. Bureau of Reclamation, Mid-Pacific Region. Task

Manager for the preparation of environmental documents under NEPA and CEQA. The project involves the construction of a new Mendota Dam downstream from the site of the existing dam. A new, modern Mendota Dam would reduce the need for dewatering the reservoir (Mendota Pool) to perform dam safety inspections, thus ensuring the reliability of water deliveries from the Mendota Pool to the Mendota Wildlife Area. The project includes the evaluation of the potential changes in riparian habitat associated with the footprint of the new dam in relationship to an existing Programmatic Biological Opinion.

San Francisco Electric Reliability Project, Public Utilities District for the City and County of San Francisco, California. Task Manager for the preparation of the Water Resources section of this Application for Certification, a California Energy Commission process that is functionally equivalent to CEQA. The CEQA-equivalent evaluation is focuses on water, wastewater, and stormwater generation and use by the proposed facility in the context of Citywide compliance with the federal Clean Water Act and state Porter-Cologne Water Quality Control Act.

Conveyance of Refuge Water Supply – East Bear Creek Unit Environmental Assessment, U.S. Bureau of Reclamation, Mid-Pacific Region. Project Manager for the preparation of environmental documents under NEPA and CEQA. The project involves the construction of new conveyance infrastructure to provide reliable water deliveries to the East Bear Creek Unit of the San Luis National Wildlife Refuge. The East Bear Creek Unit was established as part of the San Joaquin Basin Action Plan/Kesterson Mitigation Plan, and is undergoing habitat restoration from grazing land to productive wetland and associated upland habitat. Completion of the environmental documents and associated permits would allow the delivery of reliable water supplies to sustain the restored habitat.

Natomas Basin Habitat Conservation Plan, City of Sacramento and Sutter County, California. Assistant Project Manager for the environmental evaluation of the revised Natomas Basin HCP. The EIS/EIR evaluated the environmental consequences associated with implementing the activities covered by the HCP, including 17,500 acres of urban development, management of canals and drains by local water agencies, and development and management of an 8,750-acre system of habitat reserves by the Natomas Basin Conservancy.

Conveyance of Refuge Water Supply – South San Joaquin Valley Environmental Assessment/Initial Study, U.S. Bureau of Reclamation, Mid-Pacific Region. Task Manager for the preparation of environmental documents under NEPA and CEQA. This project involved capacity improvements to existing agricultural water conveyance infrastructure to allow delivery of reliable water supplies to the Kern National Wildlife Refuge and the Pixley National Wildlife Refuge in the southern San Joaquin Valley. The key resource of concern was threatened and endangered species that are known to inhabit the unique alkali grassland habitat in the southern San Joaquin Valley, including the San Joaquin kit fox, several threatened reptiles, and many special-status plants.

Modesto Irrigation District Electric Generation Station, Modesto Irrigation District, Ripon, California. Task Manager for the preparation of the Water Resources section of this Small Power Plant Exemption, a California Energy Commission process that is functionally equivalent to CEQA. The CEQA-equivalent evaluation focused on water, wastewater, and stormwater generation and use by the proposed facility in compliance with the federal Clean Water Act and state Porter-Cologne Water Quality Control Act.

Modifications to Folsom Dam, U.S. Army Corps of Engineers, Sacramento District, California. Coordinated the preparation of the Fisheries, Water Quality, Vegetation and Wildlife, Recreation, Transportation, and Air Quality sections of the Environmental Assessment/Initial Study for the Army Corps of Engineers' proposed modifications to Folsom Dam. The modifications included enlarging the existing river outlets and increasing emergency storage capacity in order to improve flood control operations. Coordinated the development of a two-dimensional hydrologic model to study the movement of spawning gravel in the Lower American River.

Bradshaw Interceptor and Road Widening, Sacramento Regional County Sanitation District, Sacramento, California. Task Leader for the coordination of all environmental permit activities to the construction of a large-diameter sewer interceptor along Bradshaw Road in Sacramento County, and the widening of the road from two to four lanes. Permitting agencies include the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, California Department of Fish and Game, Central Valley Regional Water Quality Control Board, and the State Historic Preservation Officer. Managed staff in wetland delineation and special-status species surveys. Also coordinated with the County's Department of Environmental Review and Assessment to ensure the completion of environmental documentation for the project.

Habitat Conservation Plan/Sustained Yield Plan, Jackson Demonstration State Forest, Mendocino County, California. Assistant Project Manager for the preparation of an EIS/EIR under NEPA and CEQA for a multi-species Habitat Conservation Plan/Sustained Yield Plan for the 50,000-acre Jackson Demonstration State Forest. The forest is owned and managed by the State of California for the purpose of forest management experimentation and demonstration.

American River Watershed Project, Common Features – Archeological and Biological Monitoring, U.S. Army corps of Engineers, Sacramento District, California. Project Manager for a team of contract archeological and biological monitors. The project involved a series of 120 soil borings along the east levee of the Sacramento River and the Natomas Cross Canal during the summer and fall of 2001. Both the archeological and biological monitoring required close coordinating with the Corps' onsite supervisor to communicate monitoring needs and to track progress.

Habitat Conservation Plan, Green Diamond (Simpson) Timber Company, Humboldt and Del Norte Counties, California. Prepared the land use, recreation, visual, traffic, and socioeconomic condition sections of the EIS for a multi-species Habitat Conservation Plan. The EIS evaluated the environmental consequences of changing forest management practices pursuant to an HCP designed to provide greater production of anadromous salmonids on approximately 430,000 acres of North Coast timberlands.

Water Treatment Plant Expansion, City of Sacramento, California. Coordinated preparation of the City of Sacramento's Environmental Impact Report to assess the planned expansion of the E.A. Fairbairn and Sacramento River Water Treatment Plants. Responsible for preparing and coordinating the preparation of all impact sections. The EIR required project-level impact considerations that included the application of PROSIM, a hydrologic model used to simulate Central Valley Project water deliveries.

Environmental Assessments for Central Valley Wildlife Refuges, U.S. Bureau of Reclamation, Mid-Pacific Region. Coordinated the preparation of three Environmental Assessments for issuance of long-term contracts covering 14 wildlife refuges pursuant to the Central Valley Project Improvement Act. Assisted in execution of the water supply contracts, which provided water to individual wildlife refuges throughout the Central Valley.

Sewer Relocation Project, Vallejo Sanitation and Flood Control District, Vallejo, California. Task Leader for the preparation of a CEQA Initial Study for the relocation of a sewer pipeline near the intersection of State Route 29 and State Route 37. Prepared entire Initial Study and Mitigated Negative Declaration with input from biological resources specialists. The project was located close to sensitive title marsh habitat and,

therefore, required close coordination with state and federal agencies for wetlands and endangered species permitting.

Use Permit for Land Treatment of Agricultural Process Wastewater, Colusa Industrial Properties, Colusa, California. Task Leader for the preparation of a CEQA Initial Study for the use of a parcel of land for land disposal of agricultural process wastewater. The Initial Study was required to satisfy Colusa County Use Permit requirements. Prepared entire Initial Study with the assistance of soil scientists and water quality specialists. Assisted in the regulatory process for the issuance of Waste Discharge Requirements by the Central Valley Regional Water Quality Control Board.

Fish Passage Facility, U.S. Fish and Wildlife Service and California Department of Fish and Game, Chico, California. Project Manager for the preparation of an Environmental Assessment/Initial Study under NEPA and CEQA. Also, coordinated the approval of all necessary environmental permits. Permitting agencies include the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, California Department of Fish and Game, Central Valley Regional Water Quality Control Board, and the State Historic Preservation Officer. The project involved the construction of a new fish passage facility on Durham Mutual Water Company's unscreened diversion on Butte Creek, California.

Fish Passage Facility, U.S. Fish and Wildlife Service and California Department of Fish and Game, Durham, California. Project Manager for the preparation of an Environmental Assessment/Initial Study under NEPA and CEQA. Also, coordinated the approval of all necessary environmental permits. Permitting agencies include the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, California Department of Fish and Game, Central Valley Regional Water Quality Control Board, and the State Historic Preservation Officer. The project involved the construction of a new fish passage facility at Rancho Esquon Partners' unscreened diversion at Adams Dam on Butte Creek, California.

Pipeline and Pump House Facility, Nevada Irrigation District, Nevada County, California. Project Manager for the preparation of an Initial Study under CEQA for a 2,500-foot pipeline and pump house facility in rural Nevada County. Also coordinated all environmental review processes. The project increased redundancy in Nevada Irrigation District's water supply system by providing emergency supplies to its E. George Water Treatment Plant.

Fish Screens and Gradient Restoration Facility, Glenn-Colusa Irrigation District, Hamilton City, California. Prepared the land use, transportation, and noise affected environment and environmental consequences section of the EIS/EIR for construction of fish screens and a Gradient Restoration Facility at the GCID diversion on the Sacramento River.

Habitat Conservation Plan, Stimson Lumber Company, Del Norte County, California. Coordinated the preparation of an Environmental Impact Statement/Program Timberland Environmental Impact Report for a multiple species Habitat Conservation Plan. The HCP covered approximately 30,000 acres of private North Coast timberlands.

Environmental Assessment, Fruit Growers Supply Company, Siskiyou County, California. Coordinated preparation of an Environmental Assessment under NEPA for a northern spotted owl Habitat Conservation Plan, incorporating more than 200,000 acres of timberland in Siskiyou County. In addition to coordination of NEPA documentation in

accordance with U.S. Fish and Wildlife Service guidelines, was responsible for preparation of several technical section of the Environmental Assessment.

Senior Housing Complex, City of Folsom, California. Project Manager for an Initial Study under CEQA for a 90-unit senior housing complex located on a 10-acre property in the City of Folsom.

EXHIBIT B-6
DECLARATION OF MARSHA GALE

Declaration of
Marsha Gale
Carlsbad Energy Center Project
(07-AFC-6)

I, Marsha Gale, declare as follows:

1. I am presently employed by Environmental Vision under contract with Carlsbad Energy Center LLC to provide environmental consulting services for the Carlsbad Energy Center Project ("CECP").
2. A copy of my professional qualifications and experience is attached hereto as Exhibit A and incorporated by reference herein.
3. I caused to be prepared or prepared information for **Visual Resources** in support of the Application for Certification ("AFC") for CECP. Such information was based on my independent analysis of data from reliable documents and sources and my professional experience and knowledge. Specifically, I prepared or caused to be prepared the following:
 - a. AFC Visual Resources Section 5.13
 - b. Project Enhancement and Refinement Section 5.13
 - c. Data Responses to:
 - i. California Energy Commission ("CEC") Staff Data Requests, Set 1A, #61-71;
 - ii. CEC Staff Data Requests, Set 2, #104-111
 - iii. City of Carlsbad Data Requests, Set 1A, #58-60
 - d. Applicant's Testimony Regarding Final Staff Assessment Conditions of Certification for Visual.
4. It is my professional opinion that the information provided to the California Energy Commission related to the CECP AFC proceeding is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony presented by me and, if called as a witness, could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

December 1, 2009

Date



Marsha Gale

EXHIBIT A

ENVIRONMENTAL VISION

2550 NINTH STREET
S U I T E 2 0 5
BERKELEY CA 94710
5 1 0 . 5 4 0 . 4 8 8 2
FAX 510.540.1154

MARSHA GALE

Managing Principal

Expertise

Visual Analysis and Simulation, Landscape and Site planning, Aesthetic Design, and Graphic Communication Techniques

Qualifications Summary

Over 28 years of professional experience in environmental planning and design including directing visual studies for large scale energy and infrastructure projects. An accomplished landscape planner, with particular expertise in visual resource analysis and aesthetic design.

Ms Gale is highly familiar with state and federal agency methods for visual analysis and has prepared numerous studies that conform to CEQA and NEPA requirements. She has directed visual studies for projects located throughout California and the western U.S. Previous experience includes infrastructure projects located in CO, ID, OR, NV, AZ and TX as well as international consulting. She has lectured internationally on the subject of visual simulation applications for project planning, design, and environmental assessment.

Academic Background

M.C.P., Master of City & Regional Planning
University of California at Berkeley, 1987

M.L.A., Master of Landscape Architecture
University of California at Berkeley, 1986

B.L.A., Bachelor of Landscape Architecture
University of Illinois at Champaign/Urbana, 1974

Selected Projects

East County Substation and Transmission Line Project *San Diego County, California*

Directed visual resource study including landscape mitigation plans and realistic simulations for two substations and a new 15-mile electric transmission line located near the Mexico border, adjacent to federally managed land under the Desert Protection Act. Coordinated County review and approval of landscape mitigation plans.

Jefferson-Martin 230 kV Transmission Project *San Mateo County, California*

Directed visual analysis with realistic visual simulations for 18-mile overhead portion of the Jefferson Martin 230kV transmission line. Located in a sensitive and scenic viewshed, the project traverses public watershed land and passes near existing residential areas and parkland. Visual assessment addressed new transition station and replacement of existing transmission towers and conductor. Provided expert testimony in CPUC proceedings. Directed design of site-specific aesthetic mitigation for environmental compliance/project implementation.

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Marsha Gale

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Tri-Valley 230kV Transmission Capacity Increase Project

Alameda/Contra Costa County, California

Directed visual analysis with realistic visual simulations for transmission facility improvements including new substation and transition stations and 30 miles of new overhead conductor. Project was constructed and is currently in operation.

Tuscarora Natural Gas Pipeline Project

Nevada, California, Oregon.

Directed visual analysis and computer-generated visual simulations for 230-mile gas pipeline project FERC application. Coordinated state and federal resource (State Lands, Bureau of Land Management) agency input. Directed site-specific visual study with mitigation guidelines for corridor segment located in scenic Spanish Springs valley.

Humboldt Bay Repowering Project

Humboldt County, California.

Directed aesthetic resources evaluation for 160 MW power plant. Directed design of an ecologically appropriate conceptual landscape plan, review/evaluation of public plans including the local coastal plans and preparation of realistic computer-generated visual simulations.

Turkey Ranch Compressor Station Project

Roseville, California.

Directed visual simulation and landscape mitigation study for the proposed compressor station facility. Simulations were presented as part of the local design review process.

Otay Mesa 230 kV Transmission Project

San Diego County, California

Directed visual resource study with realistic simulations for 230-kV electric transmission line project that crosses the cities of San Diego, Santee, Chula Vista, National City, and unincorporated areas in San Diego County. Prepared aesthetic mitigation measures including landscape design concepts for visually sensitive portions of the transmission line corridor and new substation facility.

North San Jose Transmission Capacity Increase Project

Santa Clara County, California.

Directed visual resource assessment with realistic simulations for the project proponent's Environmental Assessment of a new 230kV 15-mile transmission line and substation. In consultation with public agencies, developed streetscape design treatment and other aesthetic mitigation.

**Professional
Affiliations**

- Member, American Society of Landscape Architects (ASLA)
- Member, Urban Land Institute (ULI)

ENVIRONMENTAL VISION

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Marsha Gale

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Additional Experience

Project Visual Studies

- Rocky Mountain Energy Center – Weld, CO
- Tracy to Silver Lake Transmission Line Project – Sparks, NV
- Carlsbad Energy Center Project - San Diego County, CA
- Santa Clara- Getty Transmission Line Project – Santa Barbara County
- Tehachapi Renewable Transmission Project – Kern, San Bernardino Co.
- Elk Hills Power Plant - Kern County, CA
- Inland Energy Center - Riverside County, CA
- Valley-Auld Transmission Line Project - Riverside County, CA
- Cabazon Wind Development - Riverside County, CA
- Malaga Power Plant - Fresno County, CA
- Clovis Substation Project – Fresno County, CA
- SMUD Solano Wind Project EIR - Solano County, CA
- Vasona Substation Project - Los Gatos, CA
- Indio Transmission Improvement Project - Riverside County, CA
- Otay Mesa 230 kV Transmission Line Project – San Diego County, CA
- Robles Substation Project PEA – Contra Costa, CA
- Fairfield Energy Center -Solano County, CA
- China Shipping Terminal Project EIS – Port of Los Angeles, CA
- Bayside Water Treatment EIR – Alameda County, CA
- Salton Sea Water Transfer Project EIR/EIS – Riverside County, CA
- San Clemente Dam Seismic Improvements– Monterey County, CA
- Altamont Wind Repowering Project EIR- Alameda County, CA
- Potrero- Hunters Point Transmission Project PEA – San Francisco, CA
- Mare Island Dredge Disposal Site EIR/EIS – Vallejo, CA

EXHIBIT B-7
DECLARATION OF CLINT HELTON

Declaration of
CLINT HELTON
Carlsbad Energy Center Project
(07-AFC-6)

I, CLINT HELTON, declare as follows:

1. I am presently employed by CH2M HILL Inc. under contract with Carlsbad Energy Center LLC to provide environmental consulting services for the Carlsbad Energy Center Project ("CECP").
2. A copy of my professional qualifications and experience is attached hereto as Exhibit A and incorporated by reference herein.
3. I caused to be prepared or prepared information for **Cultural Resources** in support of the Application for Certification ("AFC") for CECP. Such information was based on my independent analysis of data from reliable documents and sources and my professional experience and knowledge. Specifically, I prepared or caused to be prepared the following:
 - a. AFC Cultural Resources Section 5.3
 - b. Data Adequacy Supplement A
 - c. Project Enhancement and Refinement Section 5.3
 - d. Confidential Records related to cultural resources (submitted under seal 10/11/07 and 10/23/07)
 - e. Data Responses to:
 - i. California Energy Commission ("CEC") Staff Data Requests, Set 1A, #28-33
 - ii. CEC Staff Data Requests, Set 2A, #119-122
 - iii. CEC Staff Data Requests, Set 3A, #126, 129-131
 - f. Applicant's Testimony Regarding Final Staff Assessment Conditions of Certification for Cultural Resources
4. It is my professional opinion that the information provided to the California Energy Commission related to the CECP AFC proceeding is valid and accurate with respect to the issues addressed herein.
5. I am personally familiar with the facts and conclusions related in the testimony presented by me and, if called as a witness, could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

12/14/09
Date

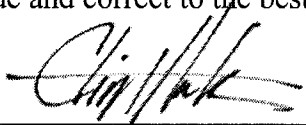

CLINT HELTON

EXHIBIT A

Clint Helton, RPA

Cultural Resources Task Lead

Education

M.A., Anthropology

B.A., Language and Literature

Professional Registration

Registered Professional Archaeologist (1999, No. 11280)

Distinguishing Qualifications

- Strong background in environmental impact evaluations, with particular expertise in conducting cultural resources studies in California, Colorado, Idaho, Nevada, Utah, and Wyoming
- Has 13 years of environmental management experience in the western U.S.
- Meets Secretary of Interior Professional Qualification Standards (36 CFR 61)
- Highly experienced managing cultural resources studies for large linear transportation and utility projects to meet requirements of National Environmental Policy Act (NEPA), National Historic Preservation Act (NHPA), California Environmental Quality Act (CEQA), and standards of the California Energy Commission (CEC), and Federal Energy Regulatory Commission (FERC)

Relevant Experience

Mr. Helton is an environmental consultant with more than 13 years of environmental management experience in the western United States. He has a strong background in environmental impact evaluations, having directed technical studies; negotiated with lead agencies, responsible agencies, and clients; and written, edited, and produced a substantial number of environmental review and technical documents. Mr. Helton has extensive experience of regulatory compliance, cultural and paleontological resources, NEPA and NHPA compliance activities, and federal regulations governing treatment of cultural resources, especially Section 106 of NHPA (36CFR800) and the Native American Graves Protection and Repatriation Act (NAGPRA) (43CFR10). Additionally, Mr. Helton is experienced with the challenges of preparing environmental documentation for large linear utility projects, including large interstate pipelines and is familiar with the process and guidelines of CEC and FERC among others. Mr. Helton has authored numerous environmental technical reports, cultural resources management plans, cultural resources studies, Programmatic Agreements, and Memorandums of Understanding (MOU) and contributed to many NEPA and CEQA documents for a variety of private and public sector clients.

Representative Projects

Task Manager, Carlsbad Energy Center Project, Carlsbad, California. Task Lead and overall management of cultural resources studies for the construction of a combined-cycle facility consisting of two natural-gas-fired turbines, heat recovery steam generators, steam turbine generators, and associated equipment. Responsible for preparation of cultural resources component of project, including field surveys, report preparation, and conducting Native American consultation.

Task Manager, GWF Energy Tracy Combined Cycle Conversion Project, San Joaquin County, California. Task Lead and overall management of cultural resources studies for this conversion of an existing peaking plant to a combined-cycle baseload facility in San Joaquin County, California. Responsible for preparation of cultural resources component of project, including field surveys, report preparation, and conducting Native American consultation.

Task Manager, BrightSource Energy, Ivanpah Solar Electric Generating System Project, San Bernardino County, California. Assisted with preparation of Application For Certification for California Energy Commission in support of a large proposed solar power generation facility covering over 4,000 acres of land managed by Bureau of Land Management in San Bernardino County, California. Responsible for preparation of cultural resources component of project, including archival research, field surveys, report preparation, and conducting Native American consultation.

Task Manager, Terra-Gen LLC Alta Wind Project, Kern County, California. Task Lead, quality control manager, and overall management of cultural resources studies for this 5,000-acre-plus alternative energy development project near the City of Tehachapi, Kern County, California. Provide regulatory guidance, regional technical expertise in cultural resources and coordination with Kern County. Supervised inventory for cultural resources, technical report preparation, and conducted Native American Consultation.

Task Manager, Iberdrola Renewables, Multiple Solar Energy Development Projects, Arizona, California, New Mexico, Nevada. Led preparation of cultural resources assessments for solar power generation facilities in Arizona, New Mexico, Nevada, and California. Mr. Helton is acting as principal investigator for several critical issues analyses as well as full permit preparation of solar energy development projects in Arizona, California, Nevada, and New Mexico. Project acreages range from 5,800 acres to 35,000 acres.

Task Manager, PPM Energy, Solar Energy Development, Arizona, Nevada, California. Cultural resources assessments for solar power generation facilities in Arizona, Nevada, and California. Mr. Helton is acting as principal investigator for literature searches and field visits for several proposed solar energy projects in Arizona, California, and Nevada. Project acreages range from 2,000 acres to 25,000 acres.

Task Manager, Edison Mission Energy, Walnut Creek Energy Park Power Plant, California. Assisted with preparation of Application for Certification for California Energy Commission in support of this proposed 500-MW power generation facility in Los Angeles County, California. Responsible for preparation of cultural resources component of project, including field surveys, report preparation, and conducting Native American consultation.

Task Manager, Edison Mission Energy, Sun Valley Energy Center Power Plant, California. Assisted with preparation of Application for Certification for California Energy Commission in support of this proposed 500-MW power generation facility in San Bernardino County, California. Responsible for preparation of cultural resources component of project, including field surveys, report preparation, and conducting Native American consultation.

Task Manager, Chula Vista Energy Upgrade Project, MMC Energy, San Diego County, California. Task Lead and overall management of cultural resources studies for this 100-MW power plant upgrade project in San Diego County, California. Responsible for preparation of cultural resources component of project, including field surveys, report preparation, and conducting Native American consultation.

EXHIBIT B-8

DECLARATION OF EDWARD HOLDEN

Declaration of
Edward Holden
Carlsbad Energy Center Project
(07-AFC-6)

I, Edward Holden, declare as follows:

1. I am presently employed by Stone & Webster, Inc., A Shaw Group Company, under contract with Carlsbad Energy Center LLC to provide engineering and design services for the Carlsbad Energy Center Project ("CECP").
2. A copy of my professional qualifications and experience is attached hereto as Exhibit A and incorporated by reference herein.
3. I caused to be prepared or prepared information for **Facility Design (aka Project Description) and Natural Gas Supply** in support of the Application for Certification ("AFC") for CECP. Such information was based on my independent analysis of data from reliable documents and sources and my professional experience and knowledge. Specifically, I prepared or caused to be prepared the following:
 - a. AFC Project Description Sections 2.0 and 4.0
 - b. Project Enhancement and Refinement Sections 2.0 and 4.0
 - c. Data Adequacy Supplement A
 - d. Data Responses to:
 - i. California Energy Commission ("CEC") Staff Data Requests, CEC Staff Data Requests, 1A #34 (12/20/2007)
 - ii. CEC Staff Data Requests, Set 3B, #63-65 (10/14/2008)
4. It is my professional opinion that the information provided by me to the California Energy Commission related to the CECP AFC proceeding is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony presented by me and, if called as a witness, could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

12/14/09
Date

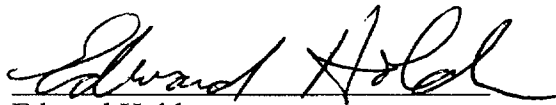

Edward Holden

EXHIBIT A

Experience Highlights

- Over 29 years of engineering and project management experience in the power generation industry.
- Project Manager on CO2 Capture Study.
- Project Manager on a Demineralizer Upgrade Study.
- Project Manager on two Gas-fired Combined Cycle power plant permit development.
- Project Manager for TXU's Sandow Unit 5 Coal-Fired Power Plant Owner's Engineer project.
- Assistant Project Manager for an emergency repowering gas combined-cycle power plant in Long Beach, CA (Owner's Engineer project).
- Startup Engineer for CCPA Geothermal Project.
- Electrical, controls, and system engineering and startup at coal, gas, geothermal, and nuclear new and retrofit power plants.
- Experience with startup and commissioning of new power plants and of retrofit and upgrade equipment and systems in existing power plants.
- Previously, Chief Engineer of Shaw's Instrument and Control Systems Department.
- Instrumentation and Controls (I&C) Engineer and Startup Manager for three low NO_x burner / burner management system power plant retrofit projects.
- Senior Controls Engineer on SCR retrofit project.
- Senior Startup Engineer for Xcel Energy's Black Dog Unit 1 and 2 Repowering project.

Education

Master of Engineering, Engineering Management, University of Colorado, Boulder, CO

Bachelor of Engineering, Mechanical Engineering, Ohio University, Athens, OH

Level I Certification, Computer Sciences, Microcomputer Applications, California State University, Sacramento, CA

Multi-Amp Institute Mini Course – Introduction to Electrical Power System Maintenance

Rensselaer Polytechnic Institute Mini Course - Programmable Controller Design and Operation
ISA, Distributed Process Control Systems, course 450

Licenses and Registrations

Credentialed Instructor, Colorado State Board of Community Colleges and Occupational Education, 2007, ACC080107002, Active, Colorado, 08/2010

Professional Engineer, Design, Colorado, South Carolina

Professional Engineer, Mechanical, California, Florida

Professional Affiliations

ISA, Member, Committee Chairman, 1981

ASME, Member, 1977

Experience Summary

Edward Holden is currently a Project Manager working projects in the Power generation Services Group. He was Chief Engineer of the Instrument and Control Systems Department from 2000 to 2006. With more than 26 years of engineering experience in electrical controls and mechanical system design installation and startup, Mr. Holden has had supervision responsibility for over 140 engineers and designers in eight Americas offices and a JV partner in India. He has been instrumental in scoping, engineering execution, installation and commissioning fifteen power plants and government facilities including gas, coal, geothermal, wood chip, and nuclear power plants, as well as plutonium processing facilities.

Selected Projects

Project Manager, Shaw Fossil Power, Centennial, CO

North Dakota Lignite Energy Council, CO2 Capture Study, Supporting Basin Electric, Great River Energy, Minnkota, Montana-Dakota and Otter Tail Utilities

Project Manager for the preparation and delivery of the Study of Carbon Dioxide Capture Technologies and Costs associated with North Dakota lignite based electrical generating stations.

HECO, Kauai Plant, Hawaii

Project Manager for the preparation and delivery for a study of the existing demineralizer and recommended upgrades to improve the system of operation and new water sources.

This study also recommends water planning for anticipated additional capacity and reliability.

NRG, Owners Engineer – Permit Support

Project Manager for the technical development of an Application for Certification for an NRG California combined cycle power plant in Carlsbad California. Developed the technical design basis and documentation to support the physical installation and permitting criteria. The project consists of two 280 MW gross 1x1x1 gas fired units, Siemens "SuperPeaker" designed to be installed at an existing jobsite inside a bermed area.

Application for Certification permitting technical design for NRG repowering project; a combined cycle power plant in El Segundo, California. The jobsite will consist of a new 2 X 2 X 1 gas fired combustion turbine on an existing site. Decommissioned power equipment is removed to be replaced with new equipment and tie into existing utilities and plant operations.

TXU, Owner's Engineer, Sandow Unit 5 Coal-Fired Power Plant, Rockdale, TX

Project Manager – Owner's Engineer services to TXU at the coal-fired Sandow Unit 5 power plant in Rockdale, Texas. Responsible for the design review of the main power plant as the owner's engineer, coal and limestone material handling system integration with the conveyor supplier, interface design with an existing plant that will remain in service and asset reallocation of equipment being abandoned in three units as a result of an adjacent metal refining plant decommissioning plan and the owner's emissions reduction requirements.

NRG, Owner's Engineer for Emergency Repowering Gas Combined-Cycle Power Plant, Long Beach, CA

Assistant Project Manager – Owner's Engineer to NRG for an emergency repowering gas combined-cycle power plant in Long Beach, California. Responsible for balance of plant design, equipment specification system integration for four gas turbines retrofitted with emissions control and major equipment upgrades for peak loading in a fast-track operation schedule.

Chief Engineer, Instrument & Control Systems Department

Chief Engineer – I&C Department. Managed the technical, staffing, standardization and training adequacy of and Instrument and Control Systems department of 140 engineers and design staff serving the power, process and nuclear business lines. This also included an offshore high-value engineering center. Responsible for project staffing, career development, recovery planning, project quality, project performance, proposal development and standards and procedures in eight offices in the Americas.

Pacific Gas and Electric, Hunters Point Unit 4 Flue Gas Recirculation (FGR) Retrofit

As Senior E&C Engineer, Mr. Holden was responsible for design of the new FGR control system and review of the associated equipment by the owner. This included a new larger FGR fan, Forney/AB PLC Burner Management System. He also identified FGR interface requirements to the new and existing plant electrical and control systems.

Mirant, Delta, Pittsburg and Contra Costa Low NO_x Burner Retrofit

As Senior E&C Engineer and Startup Manager, Mr. Holden was responsible for specification and startup of an (ABB) Bailey burner management DCS upgrade in three existing units at the Pittsburg and Contra Costa sites in Northern California. The system is an NFPA 8502 compliance upgrade. He was also responsible for specification of the low NO_x burner equipment, equipment installation, and miscellaneous support system modification design for these natural gas-fired units.

Mirant, Delta, Contra Costa and Pittsburg Three-Unit SCR Retrofit

As Senior I&C/Electrical Engineer, Mr. Holden was responsible for the EPC specification development, bid evaluation, and design review through construction of an SCR addition to these natural-gas-fired units. His review included system P&IDs, control philosophy and controls integration into the existing plant control system.

Mirant California, Portrero SCR Retrofit

As Senior I&C/Electrical Engineer, Mr. Holden was responsible for the EPC specification development and design review of an SCR addition to a natural-gas-fired power plant in San Francisco. Particular challenges were resolved during the aqueous ammonia system permitting and working around the air preheater, keeping it in place in a high seismic zone.

Mirant Corporation, Apex 500 MW Combined-Cycle Project

As Chief I&C Engineer, Mr. Holden was responsible for design review and technical quality of this, 2x2x1, 500 MW combined-cycle project utilizing GE Frame 7 FA combustion turbines, Vogt-NEM HRSGs, and an air cooled GE steam turbine, located in Nevada. These reviews included P&IDs, system descriptions, electrical schematics, control logics, power distribution designs, and control system DCS for specification compliance and operation and maintenance considerations.

Mirant Corporation, Mint Farm 380 MW Combined-Cycle Plant

As Chief I&C Engineer, Mr. Holden was responsible for design review and technical quality of this, 1x1x1, 380 MW combined-cycle project utilizing a GE Frame 7 FA combustion turbine, Foster Wheeler HRSG, and a Fuji steam turbine, located in Washington. These reviews included P&IDs, system descriptions, electrical schematics, control logics, power distribution designs, and control system DCS for specification compliance and operation and maintenance considerations.

NRG Energy, Pike 500 MW Combined-Cycle Project

As Chief E&C Engineer, Mr. Holden was responsible for design review and technical quality of this, 2x2x1, 500 MW combined-cycle project utilizing GE Frame 7 FA combustion turbines, Vogt-NEM HRSGs, and a GE steam turbine, located in Mississippi. These reviews included P&IDs, system descriptions, electrical schematics, control logics, power distribution designs, and control system DCS for specification compliance and operation and maintenance considerations.

Great River Energy, Pleasant Valley Stations Unit 11 and 12

As Senior Controls Engineer, he was responsible for balance of plant instrument and controls design and procurement on a simple-cycle combustion turbine power project involving two Westinghouse V84's, 200 MVA grassroots projects. This included instrument specification, procurement in conjunction with system design, and operation input to the system descriptions.

Xcel Energy, Black Dog Unit 1 and 2 Repowering

As Senior Startup Engineer, Mr. Holden assisted in the startup of a new combustion turbine / HRSG steam to an existing turbine repowering project in Minneapolis, Minnesota. His duties included integrating new equipment PLCs on to a Westinghouse Ovation DCS platform and interconnecting the existing control room DCS.

Salt River Project, Navajo Scrubber Project

As Senior Control Engineer for this three 750 MW unit coal power plant wet scrubber retrofit, Mr. Holden's responsibilities included design review and compliance evaluation of the scrubber manufacturer's design documentation, development of control logic and electrical elementary diagrams, and instrumentation procurement. He prepared I&C construction specifications for the balance of plant scrubber systems and he coordinated the interdisciplinary development of piping and instrument diagrams, major equipment specification, and system operation descriptions. This included coordination of Intergraph CAD efforts and three major equipment supplier contracts and control system logic configuration review of Foxboro I/A Distributed Control System (DCS) documentation.

Electric Energy, Inc., Joppa Plant, Unit 1

As Lead Startup Engineer on a DCS retrofit of a 181 MW coal-fired power plant, Mr. Holden assumed responsibility for construction and checkout of all control loops in an eight-week outage that included major boiler rework, control damper drive charge-out, and coal feeder controller replacement. The checkout included coordination with maintenance groups, new equipment installations, and Westinghouse WDPF II DCS control logic as it pertained to rewiring the BTG control panel demolition. He implemented and managed a startup test program that was introduced to permit equipment functional testing with DCS logic, producing minimal impact on scheduled maintenance outage activities.

Alaska Industrial Development and Export Authority, Healy Clean Coal Project

As Lead Instrument and Control Engineer on a new Department of Energy Clean Coal Technology demonstration 60 MW power plant, Mr. Holden prepared the functional specification for a Bailey INFI 90 DCS and developed project design criteria and project procedures. He was responsible for evaluation and implementation of several project cost containment issues. He interfaced with the mechanical group to develop the plant control system descriptions, P&IDs, and control logic, including combustion controls. He implemented a new computer aided design tool (IBM/CATIA) incorporating three-dimensional modeling and intelligent P&ID's.

Northern States Power, French Island Wood-Burning Power Plant, Lacrosse, WI

As Support Instrumentation Engineer, Mr. Holden was responsible to the Lead Engineer for portions of the controls engineering and design of a 16 MW oil-to-wood fluidized bed conversion project in LaCrosse, Wisconsin.

Assignments included developing logic diagrams and system descriptions for various plant systems, developing flow diagrams in conjunction with the mechanical group, and assembling instrument equipment lists for the purchase specification.

AM Kinney, Inc., Englewood, Colorado and Cincinnati, OH

HVAC and Plumbing Design

As Mechanical Engineer, Mr. Holden's duties included HVAC and plumbing design for a tank maintenance facility in Fort Carson, Colorado, including a specialized ventilation arrangement for a welding area. Additional assignments involved heat transfer analysis and energy balance calculations for a coke gasification pilot plant and development of process flow diagrams, including instrument selection for a coal predryer system in Butte, Montana. He was also directly responsible for piping and instrumentation specification and system design of a chloroform stripper column for Shell Chemical Company.

Proctor and Gamble Soap Plant, Brockville, Ontario, Canada

As Mechanical Engineer, Mr. Holden's duties included ventilation, air conditioning, fire protection, and plumbing systems for a Proctor and Gamble soap plant in Brockville, Ontario, Canada. His assignments included roof drainage design, yard plumbing, piping design, and control system development for plant HVAC. Other responsibilities included coordinating HVAC department drawings with plant site scale model and designing yard heat trace system.

EXHIBIT B-9
DECLARATION OF FRANCISCO D. KAYAS

Declaration of
Francisco D. Kayas, PE
Carlsbad Energy Center Project
(07-AFC-6)

I, Francisco D. Kayas, declare as follows:

1. I am presently employed by Pike Electric, Inc., under contract with Carlsbad Energy Center LLC to provide engineering consulting services for the Carlsbad Energy Center Project ("CECP").
2. A copy of my professional qualifications and experience is attached hereto as Exhibit A and incorporated by reference herein.
3. I have evaluated information related to **Transmission System Engineering** in support of the Application for Certification ("AFC") for CECP. I reviewed such information for purposes of conducting an independent evaluation of data from reliable documents and sources. Specifically, I reviewed and am prepared to testify in support of the following documents:
 - a. AFC Transmission System Engineering Section 3.0
 - b. Project Enhancement and Refinement Section 3.0
 - c. Data Adequacy Supplement A
 - d. Data Responses to:
 - i. California Energy Commission ("CEC") Staff Data Requests, Set 1A, #52-59 & 69, including Attachment DR53-1
 - ii. CEC Staff Data Requests, Set 3, #125-128
4. It is my professional opinion that the information provided to the California Energy Commission related to the CECP AFC proceeding is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony presented by me and, if called as a witness, could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

12/12/2009
Date

F.D. Kayas
Francisco D. Kayas

EXHIBIT A



FRANCISCO D. KAYAS ("FRANK"), P.E.

Title/Position: Engineering Manager

Years of Experience: 40

SUMMARY

Mr. Kayas has over 40 years experience in transmission and distribution, and control systems design of substations and power plants for electric utilities and industrial and manufacturing facilities. He has specific experience in the engineering of design of 500KV, 345KV and 230KV substations, as demonstrated by his recent experience as Project Manager for engineering and design of SMUD's new Cordova 230 kV- 69 kV Substation and Russell Substation 230KV Interconnection projects. Mr. Kayas was also responsible for the project management for Civil Engineering design for the City of Anaheim's Vermont 230kV substation project. He has held positions as System Design Engineer, Project Lead Engineer, Senior Electrical Engineer, Electrical Engineering Supervisor and Project Manager.

EDUCATION/TRAINING

- BS, Electrical Engineering, Mapua Institute of Technology, Philippines, 1960
- BS, Mechanical Engineering, Far Eastern University, Philippines, 1963

PROFESSIONAL AFFILIATIONS/CERTIFICATION

- Registered Professional Electrical Engineer, California, License No. E8942

PROFESSIONAL EXPERIENCE

Engineering Manager, Western Region

8/1996 to Present

Supervising Electrical Engineer

Pike Electric, Inc.; previously Shaw Energy Delivery Services, Inc.

Mr. Kayas was the Project Lead Engineer for engineering and design of Nevada Energy Harry Allen 500KV Switchyard in North Las Vegas, Nevada.

Project Manager or Lead Electrical Engineer for various clients, utilities and municipalities with projects including:

- Engineering and design of Sacramento Municipal Utility District, 230kV Russell Substation in Birds Landing, CA.
- Engineering and design of Pasadena Water & Power new Unit Substation project at Glenarm Substation and addition of capacitor bank project at Santa Anita Substation.
- Engineering and design of Sacramento Municipal Utility District, 230-69kV Cordova Substation in Sacramento, CA.
- Lead Electrical Engineer for engineering and design of the 34.5-12kV GIS Substation for the Hollywood Way Distribution Station in Burbank, CA



- Lead Project Electrical Engineer for engineering and design of the 230kV Switchyard and Transmission Lines for the Grays Harbor Power Plant Project at Elma, Washington.
- Lead Electrical Engineer overseeing the engineering and design of THUMS Long Beach LM6000 Simple Cycle Power Plant at Long Beach, CA.
- Lead Engineer overseeing the engineering and design of the 34.5-13.8kV Lambertville Substation in New Jersey.
- Lead Engineer overseeing the engineering and design of the 26-13.8kV Freehold Substation in New Jersey.
- Lead Electrical Engineer for engineering and design of the 34.5-6.9kV GIS Substation for the A.E. Capon Distribution Station in Burbank, CA.

Supervising Electrical Engineer

8/1991 - 7/1996

Duke Engineering & Services

Mr. Kayas was the Lead Project Electrical Engineer for engineering and design of the 230kV Switchyard and Transmission Lines for the Moss Landing Power Plant Project at Moss Landing, California.

Mr. Kayas was also the Lead Engineer for engineering and design of the 115-6.9kV Substations and 34-6.9 kV Substations for the water pumping stations in Venezuela.

Mr. Kayas was also the Lead Engineer for engineering and design of the IBM substation in San Jose, CA. This was a 40MVA, 115kV-12.47kV double-ended (with preferred and alternate 115kV incoming lines) substation. Major equipment included two 20MVA transformers, three 115kV SF6 breakers. He was responsible for design, substation layout/arrangement, ground grids design, conduit/raceway system, 3-line diagrams, DC schematics, relay/control logic, calculations, short circuit and coordination studies, and technical specifications, coordination with client engineers, equipment vendors, and construction crew.

He was also Lead Engineer for a 69kV-12.47kV substation for Criterion Catalyst in Pittsburg, CA. Responsibilities included design, prepare calculations and equipment procurement specifications, coordinate with the supplier of the steel structure for the lattice steel construction of the dead-end structure, equipment and OH switch supports, low profile buses and coordinate with PG&E substation and protection engineers.

He was Lead Project Engineer on NUMMI Truck Project which involves the addition of new facility for the truck assembly line at Fremont Assembly Plant. The project also involved design and installation of a new 115kV substation which replaced the existing PG&E owned 115kV substation. The new substation included two 30/40/50 MVA, 115/12.47 kV Transformers, two 115kV, SF6 incoming line breakers and one 115 kV, SF6 Bus Tie breaker. Distribution system included addition of ten 12.47kV feeders for the new facility using indoor 15kV vacuum circuit breakers.

Other activities included design of an outdoor control room for control, relay, protection, SCADA, station service and battery system. The design included metering, protective relaying and controls for the new SF6 type breakers and main transformers that feeds the existing 12kV substations.



Mr. Kayas was reviewer and checker for installation of 27MVAR, 69kV switched capacitor bank at three substations for the City of Glendale.

Electrical Project Lead Engineer

9/1989 - 3/1991

Responsible System Engineer for the electrical distribution system for Pacific Gas and Electric Company's (PG&E) Power Plant. He was responsible for design modifications for the plant electrical distribution system (12.47kV, 4.16kV, and 480V), provided design modifications of plant. He has performed load flow and short circuit calculations using ETAP computer program, loading calculations, relay setting, sizing and calculations. He developed procedures to guide design engineers and plant engineers in sizing and setting of protection relays.

Project Engineer

3/1985 - 9/1989

Impell Corporation

He was a Project Engineer for Sacramento Municipal Utility District. While at SMUD, he performed power system coordination study using the CAPTOR program. He was also the assistant project engineer responsible for the review and analysis of the plants electrical distribution system.

He was the Project Engineer of a project that performed the review and provided the resolution to discrepancies found in SMUD's Circuit and Raceway Tracking System (CRTS).

Mr. Kayas was the engineer responsible for the modification of the electrical power distribution system at SMUD Generating Station. He supervised the design of electrical controls and protection schemes, the preparation of technical Specifications and test procedures.

Electrical Engineering Supervisor

9/1969 - 3/1985

Bechtel Power Corporation

As Electrical Engineering Supervisor, Mr. Kayas has served as a substation design Engineer for the power plant switchyard/substations where he supervised the design of the substation, control system and raceway layout design work for all the electrical modifications on various power plant systems.

Mr. Kayas also worked as a Supervising Engineer on Colstrip's 2 Units, 750 MW each, fossil power plant for Montana Power Company. He was responsible for all work regarding the preparation of controls, protection and instrumentation schemes of the scrubber and coal handling systems of the plant.

Mr. Kayas was the Electrical Engineering Supervisor responsible for both the electrical design groups for 2 Units, 1100 MW each, power station switchyards for Philadelphia Electric Company. In this position, he supervised a 35 man group of engineers and designers in the preparation of electrical systems design including layouts, AC & DC schematics, controls, protection and instrumentation schemes, and raceway layout design work of the entire plant.

As a Senior Engineer, Mr. Kayas was responsible for design of the plant power system protection and control schemes for miscellaneous mechanical systems. He performed short circuit and voltage drop calculations and protection system coordination studies. He was assigned to the a project at Will County Station No. 1 of Commonwealth Edison Company at Chicago, Illinois where he prepared the controls design and also assisted in the startup of all systems.

**Electrical Engineer****3/1968 - 9/1969****Boeing Company**

Mr. Kayas worked as an instrumentation engineer that provided instrumentation and controls support to test engineers for the Wind Tunnel Test facilities for the supersonic transport (SST) program. He also worked as electrical power systems design engineer for the Boeing 747 aircraft project.

Group Leader**6/1962 - 3/1968****Manila Electric Company**

Mr. Kayas worked as a group leader in a utility power company (Manila Electric Company) in the Philippines. His group is responsible for all the substation design including the protection, controls, equipment arrangement, ground grid, and raceway layout of all of the company owned High and Medium Voltage Power Transmission and Distribution Substations. The design includes single line, 3-line, DC schematics, metering and protective relaying of Transmission Lines, Main Generating Station Transformers and substation electrical buses. His group is also responsible for all the modifications that may be required in the existing substations such as addition of transmission line bays, distribution transformers and feeders, upgrading the transmission line protections, etc. He also provided technical leadership to engineers and designers in performing short circuit calculations, load flow analysis, protective device selection and coordination.

EXHIBIT B-10
DECLARATION OF THOMAS A. LAE

Declaration of
Thomas A. Lae
Carlsbad Energy Center Project
(07-AFC-6)

I, Thomas A. Lae, declare as follows:

1. I am presently employed by CH2M HILL under contract with Carlsbad Energy Center LLC to provide environmental consulting services for the Carlsbad Energy Center Project ("CECP").
2. A copy of my professional qualifications and experience is attached hereto as Exhibit A and incorporated by reference herein.
3. I caused to be prepared or prepared information for **Geologic Hazards and Resources** in support of the Application for Certification ("AFC") for CECP. Such information was based on my independent analysis of data from reliable documents and sources and my professional experience and knowledge. Specifically, I prepared or caused to be prepared the following:
 - a. AFC Geologic Hazards and Resources Section 5.4
 - b. Project Enhancement and Refinement Section 5.4
4. It is my professional opinion that the information provided to the California Energy Commission related to the CECP AFC proceeding is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony presented by me and, if called as a witness, could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

12-2-09
Date

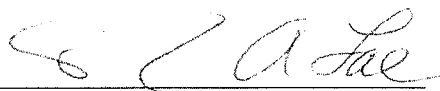

Thomas A. Lae

EXHIBIT A

Thomas Lae, P.G.

Geologic Hazards and Resources Task Lead

Education

B.S., Geology

Professional Registration

State of California Professional Geologist, License No. 7099

Relevant Experience

Mr. Lae has more than 18 years of experience in environmental geology and project management and is a California Professional Geologist. Mr. Lae works on numerous projects for a variety of private, federal, and municipal clients and has an extensive background in environmental field investigations. Projects include: geologic hazards and resources section preparer for numerous power plant licensing projects, Superfund site investigation oversight, remedial investigations/feasibility studies, underground storage tank/oil water separator closures, landfill groundwater monitoring, and phase II environmental assessments.

Representative Projects

Carlsbad Energy Center Project, Carlsbad, California. Authored Geologic Hazards and Resources section of California Energy Commission Application for Certification for the construction of a combined-cycle facility consisting of two natural-gas-fired turbines, heat recovery steam generators, steam turbine generators, and associated equipment.

GWF Energy Tracy Combined Cycle Conversion Project, San Joaquin County, California. Authored Geologic Hazards and Resources section of California Energy Commission Application for Certification for the conversion of an existing peaking plant to a combined-cycle baseload facility. The combined-cycle facility included two natural-gas-fired turbines, fired heat recovery steam generators, steam turbine generator, and associated equipment.

Electrical Power Plant Application for Certification section preparer. Mr. Lae has prepared Geologic Hazards and Resources sections for 22 AFCs. These include East Altamont Energy Center (Calpine), Central Valley Energy Center (Calpine), Los Esteros Energy Center (Calpine), Cosumnes Power Plant (SMUD), Woodland II (Modesto Irrigation District), Modesto Electric Generation Station (Modesto Irrigation District), Walnut Energy Center (Turlock Irrigation District), San Francisco Electrical Reliability Project (San Francisco Public Utilities Commission), Highgrove (AES Pacific), Walnut Creek Energy Project (Edison Mission Energy), Sun Valley Energy Project (Edison Mission Energy), Eastshore Energy Project (Tierra), South Bay Energy Facility (Duke), Chevron Richmond Power Plant Replacement Project SPPE, Ivanpah Solar Electric Generating System (Bright Source Energy), Carlsbad Energy Center Project (NRG), Tracy Power Plant (GWF), Vacaville Energy Center (Competitive Power Ventures), Lodi Energy Center (NCPA), Contra Costa Generating Station (Radback Energy), and Mariposa Energy Project (DGC). Mr. Lae is well

versed in the assessment of geologic resources and hazards relating to CEQA and NEPA requirements.

California Energy Commission Hazardous Waste Remediation Oversight. A part of the PG&E Gateway Generating Station construction (Antioch, California) and Colusa Generating Station (Colusa, California), Mr. Lae served as the project's on-call Professional Geologist. His duties included the coordination of sampling, characterization, and remediation of hazardous waste materials (asbestos, PCBs, and/or TPH) encountered during plant excavation activities. Mr. Lae provided summary reports upon completion of remedial activities for submittal to the CEC.

Superfund Site Investigation Oversight. CH2M HILL provides oversight support to the USEPA for six task orders, with Mr. Lae serving as project manager. This project involves the review and comment of reports, white papers, technical memoranda, and studies that are submitted for regulatory review. This facility that has been impacted by solvent, fuel, propellant, and metals contamination in soil, soil gas, and groundwater.

Union Pacific Railroad. Mr. Lae serves as the project manager for four UPRR projects that include: a groundwater and soil TPH investigation at a former UST site (Donner Summit UST); and an arsenic in soil assessment at a Right of Way (Clyde, California). Mr. Lae successfully received regulatory closure including a TPH in soil site at Right of Way (Chico, California), and nitrogen contamination in onsite soils (Willows, California).

Groundwater Study/Well Decommissioning. Mr. Lae served as the project manager for TO 467 at Beale AFB. This project involved the installation of groundwater monitoring wells and the collection of groundwater samples to assess the effects of potential impact to the underlying groundwater from a retention pond that receives treated waste water. In addition, this project required the destruction of several former water/agricultural supply wells at the base per County and State destruction protocol.

Soil Vapor Extraction System Termination. Mr. Lae served as the project manager for the IC27 STOP project at the former McClellan AFB. This project involved the collection of soil gas samples and the preparation of report documentation to support the SVE system termination (closure). The project successfully met regulatory criteria and system termination was granted. The project also required the decommissioning of the system wells and conveyance pipelines.

Superfund Site Investigations. Mr. Lae serves as the project manager for the Lava Cap Mine site in Nevada City, California. This project is a site that has been affected by arsenic contamination from past gold mine processing and is undergoing Feasibility Study evaluations for remedial alternatives.

Oil/Water Separator Closure Investigation. Mr. Lae served as the project manager for three projects at Beale AFB in the evaluation for regulatory closure of 25 former oil/water separators across Beale. The project included the assessment of environmental impacts to underlying soil and groundwater from past releases and preparing closure documentation. Mr. Lae has successfully received closure of 23 OWSs. Two OWSs are undergoing biovent remediation prior to closure.

Groundwater Monitoring, City of Roseville, California. Mr. Lae serves as the project manager for the Annual and Semi-Annual groundwater reports for the former sanitary landfill. Duties included planning sampling events, evaluation of laboratory data, preparation of graphics and tabular data, and report writing. Mr. Lae also supports landfill gas studies at the site.

EXHIBIT B-11
DECLARATION OF STEVEN P. LONG

Declaration of
Steven P. Long
Carlsbad Energy Center Project
(07-AFC-6)

I, Steven P. Long, declare as follows:

1. I am presently employed by CH2M HILL under contract with Carlsbad Energy Center LLC to provide environmental consulting services for the Carlsbad Energy Center Project ("CECP").
2. A copy of my professional qualifications and experience is attached hereto as Exhibit A and incorporated by reference herein.
3. I caused to be prepared or prepared information for **Soil & Water Resources** in support of the Application for Certification ("AFC") for CECP. Such information was based on my independent analysis of data from reliable documents and sources and my professional experience and knowledge. Specifically, I prepared or caused to be prepared the following:
 - a. AFC Soils Section 5.11
4. It is my professional opinion that the information provided to the California Energy Commission related to the CECP AFC proceeding is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony presented by me and, if called as a witness, could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Nov. 30, 2009
Date

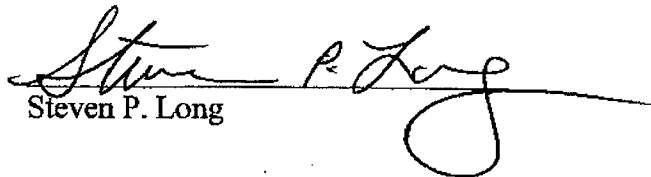

Steven P. Long

EXHIBIT A

Steve Long

Soils Task Lead

Education

M.S., Soil Science

B.S., Forest Resources

Relevant Experience

With over 20 years of professional experience as an environmental scientist, Mr. Long is responsible for a wide range of tasks associated with natural resource and hydrogeologic environmental evaluations and permitting. Duties include permit planning, preparation, and consultation with resource agencies, as well as supervision of field data collection, interpretation, and report preparation for contaminant and environmental quality assessments. Has participated in numerous investigations and risk assessments for terrestrial, aquatic, and stormwater pathway impacts for Superfund and Department of Defense projects.

Hydrogeological investigations experience includes in-field testing of soil, soil gas and groundwater samples using portable gas chromatograph; in-situ aquifer permeability testing; and monitoring subsurface explorations and installations (monitoring wells, piezometers and vapor extraction systems). Remediation experience includes managing bioventing systems and supervising site clean-ups. Strong skills in environmental sampling and testing.

Natural resource experience includes evaluations of wetland, riparian, forest, and agricultural systems. Duties have included delineation and documentation of wetlands by federal and state criteria in California, Nevada, Washington, Connecticut, Massachusetts, New York, New Hampshire, and Maine; evaluation of project constraints and development of alternate strategies for local, state, and federal permitting. Strong skills in soil description and taxonomic classification, vegetation, and insects; permitting of wetland activities; and statistical data analyses.

Representative Projects

Carlsbad Energy Center Project. Provided senior review for AFC section that assessed potential impacts to soil and agricultural resources for the construction of a combined-cycle facility consisting of two natural-gas-fired turbines, heat recovery steam generators, steam turbine generators, and associated equipment.

GWF Tracy Power Plant, San Joaquin County, California. Provided senior review for AFC section that assessed potential impacts to soil and agricultural resources for the proposed power plant project and transmission line. Assisted with project compliance by documenting contact with California Department of Fish and Game biologists to communicate plan for pre-construction surveys for San Joaquin kit fox, western burrowing owls, and raptors.

Ivanpah Solar Electric Generating System, San Bernardino County, California. Provided senior review for AFC section that assessed potential impacts to soil and agricultural resources for the proposed power plant project which encompassed approximately 3,800 acres in the Mojave Desert. Provided additional support for wind and water soil loss estimates used to estimate needs for construction water use and maintenance of detention pond facilities.

Chula Vista Energy Upgrade Project, MMC Energy, San Diego County, California. Prepared CEQA-equivalent documentation to support an Application for Certifications (AFC) for review by the California Energy Commission. Prepared AFC section that assessed potential impacts to soil and agricultural resources for the proposed power plant projects. This documentation included a summary of applicable laws, ordinances, and regulations (LORS), estimates of soil losses from wind and water erosion during construction, and agencies contacts.

Humboldt Bay Replacement Project, PG&E. Planned and executed the Phase II ESA using staff from a minority owned 'mentor-protégé' firm. Prepared the Phase II ESA cost proposal and work plan. Coordinated the field sampling activities and prepared the report. Met with client and regulator from the North Coast Regional Water Quality Board, where we garnered approval for our final recommended site investigation tasks to complete the Phase II ESA. Provided senior review for AFC section that assessed potential impacts to soil and agricultural resources for the proposed power plant project.

South Bay Replacement Project, LS Power. Prepared CEQA-equivalent documentation to support an Application for Certifications (AFC) for review by the California Energy Commission. Prepared AFC section that assessed potential impacts to soil and agricultural resources for the proposed power plant projects including all linear features (transmission lines, water supply and discharge lines, and natural gas supply lines). Also prepared section for waste management that described demolition, construction, and operation waste streams. This documentation included summaries of applicable laws, ordinances, and regulations (LORS) and agencies contacts. It also included estimates of soil losses from wind and water erosion during construction and mitigation and management strategies.

Eastshore Energy Center, Tierra. Prepared CEQA-equivalent documentation to support an Application for Certifications (AFC) for review by the California Energy Commission. Prepared AFC section that assessed potential impacts to soil and agricultural resources for the proposed power plant projects including all linear features (transmission lines, water supply and discharge lines, and natural gas supply lines). This documentation also included a summary of applicable laws, ordinances, and regulations (LORS), estimates of soil losses from water erosion during construction, and agencies contacts.

Application for Certification, Los Esteros Critical Energy Facility, Calpine C*Power, San Jose, California. Prepared Biological Resources Mitigation and Monitoring Plan (BRMIMP) for the Los Esteros Critical Energy Facility. Also documented the extent of jurisdictional waters of the U.S. at a stormwater outfall along Coyote Creek. Prepared a Low Effect Habitat Conservation Plan for the Phase II Facility. This plan was submitted for Section 10 consultation with the U.S. Fish and Wildlife Service to secure an incidental take permit for Bay Checkerspot butterfly and to offset potential impacts to four endemic serpentine plants under the Endangered Species.

Application for Certification, East Altamont Energy Center, Calpine Corp., Tracy, California. Prepared CEQA-equivalent documentation to support an Application for Certifications (AFC) for review by the California Energy Commission. Prepared AFC section that assessed potential impacts to soil and agricultural resources for the proposed power plant projects including all linear features (transmission lines, water supply and discharge lines, and natural gas supply lines). This documentation also included a summary of applicable laws, ordinances, and regulations (LORS), estimates of soil losses from wind and water erosion during construction, and agencies contacts. Additionally, conducted field investigations to assess wetlands in proximity to linear routes for the East Altamont Energy Center

EXHIBIT B-12
DECLARATION OF SARAH MADAMS

Declaration of
Sarah Madams
Carlsbad Energy Center Project
(07-AFC-6)

I, Sarah Madams, declare as follows:

1. I am presently employed by CH2M HILL under contract with Carlsbad Energy Center LLC to provide environmental consulting services for the Carlsbad Energy Center Project ("CECP").
2. A copy of my professional qualifications and experience is attached hereto as Exhibit A and incorporated by reference herein.
3. I caused to be prepared or prepared information for **Hazardous Materials Handling** in support of the Application for Certification ("AFC") for CECP. Such information was based on my independent analysis of data from reliable documents and sources and my professional experience and knowledge. Specifically, I prepared or caused to be prepared the following:
 - a. AFC Hazardous Materials Handling Section 5.5
 - b. Project Enhancement and Refinement Section 5.5
 - c. Data Responses to:
 - i. California Energy Commission ("CEC") Staff Data Requests, Set 2, #92-95
 - ii. City of Carlsbad Data Requests, Set 1A, #61
4. It is my professional opinion that the information provided to the California Energy Commission related to the CECP AFC proceeding is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony presented by me and, if called as a witness, could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.



12/9/09

Date

NAME OF WITNESS

EXHIBIT A

Sarah Madams

Hazardous Materials Handling and Waste Management Task Lead

Education

B.S., Environmental Toxicology

Relevant Experience

Ms. Madams has more than 11 years of professional experience including project management, regulatory compliance, permitting, public involvement/community relations, data collection and analysis, database management, compliance audits, document preparation, and technical writing. For the last 6 years, Ms. Madams has served as the Deputy Project Manager for power plant licensing work performed by CH2M HILL, and is serving as the Project Manager for the Lodi Energy Center and the Almond 2 Power Plant. Her expertise includes working with multidisciplinary teams to assess the environmental impacts of power plant projects on the environment. These assessments include impacts to air, biological and cultural resources, land uses, noise, socioeconomics, public health, water and visual resources, soils and geology, and paleontology.

Representative Projects

Carlsbad Energy Center Project. Prepared the AFC Hazardous Materials and Waste Management sections for the construction of a combined-cycle facility consisting of two natural-gas-fired turbines, heat recovery steam generators, steam turbine generators, and associated equipment.

GWF Energy Tracy Combined Cycle Conversion Project, San Joaquin County, California. Prepared the AFC Hazardous Materials and Waste Management sections for the conversion of an existing peaking plant to a combined-cycle baseload facility consisting of two natural-gas-fired turbines, fired heat recovery steam generators, steam turbine generator, and associated equipment.

Lodi Energy Center, NCPA, San Joaquin County, California. Project Manager for the licensing of this 255-MW combined cycle power plant. Managed a multidisciplinary team of scientists, planners, and engineers in preparing and filing the license application. Submitted FAA Form 7460s and notice criteria tools to FAA. Coordinated efforts between CEC project management, local and state agencies and CH2M HILL staff.

Almond 2 Power Plant, Stanislaus County, California. Project Manager for the licensing of this 174-MW combined cycle power plant. Managed a multidisciplinary team of scientists, planners, and engineers in preparing and filing the license application. Coordinated efforts between CEC project management, local and state agencies and CH2M HILL staff.

Chula Vista Energy Upgrade Project, MMC Energy, San Diego County, California. Deputy Project Manager for the AFC for a 100-MW power plant. Prepared and provided testimony on the waste management, alternatives, worker health & safety and hazardous waste sections of the AFC.

Sarah Madams

Russell City Energy Center Amendment, Calpine, Alameda County, California. Deputy Project Manager for the AFC for a 600-MW power plant. Prepared and provided written testimony for the waste management, alternatives, worker health & safety and hazardous waste sections of the AFC. Coordinated biological and cultural surveys of the project area. Submitted FAA Form 7460s and notice criteria tools to FAA. Addressed multidisciplinary issues received from state and local agencies. Attended public workshops and hearings.

Application for Certification, Los Esteros Critical Energy Facility, Calpine C*Power, San Jose, California. Project Coordinator for the AFC for a 180-MW power plant. The project required the preparation of numerous other studies/documents to satisfy the CEC staff request. These studies/documents included the preparation of a General Plan amendment and planned development zoning applications, archaeological and paleontological survey reports, and biological resource protection permits. Ms. Madams assisted with the development and implementation of biological, cultural, and paleontological resource monitoring programs; risk management plan; and traffic and transportation management plan. The plant is currently in operation.

Application for Certification, Walnut Energy Center, Turlock Irrigation District, California. Project Coordinator for the AFC for a 250-MW combined cycle power plant. She reviewed applications, coordinated multidisciplinary data requests and responses, and coordinated efforts between CEC project management and CH2M HILL staff. Ms. Madams assisted with the development of the security plan and emergency response plan. The plant is currently in operation.

Application for Certification, Salton Sea Unit 6 Geothermal Power Plant, Mid-American Energy Holding Company, Imperial County, California. Project Coordinator for the licensing of the 185-MW geothermal power plant. The power plant design was based on the flash geothermal power plant process, which produces both solid and liquid byproducts that required disposal. The project site was in a rural area of Imperial County, but was adjacent to a National Wildlife Refuge that supports significant populations of avian species. The licensing process involved the review of all environmental areas, and specifically focused on waste disposal, air quality, hazardous materials handling, and biological resources. Ms. Madams was responsible for the development and tracking of data response submittals requested by the CEC. The project was successfully completed, with a license issued by the CEC.

Various Power Plant Applications for Certification (AFCs). Prepared or assisted on the Worker Health and Safety, Hazardous Materials, and Waste Management sections. In addition prepared Field Safety Instructions and Health and Safety Plans for the following power plant Applications for Certification:

- Ivanpah Solar Electric Generating Station
- Eastshore Energy Center
- Carlsbad Energy Center
- San Francisco Electric Reliability Project
- Walnut Creek Energy Park
- Sun Valley Energy Project

Sarah Madams

Air Quality Audits, SMUD, California. Conducted air quality audits of the Central Valley Finance Authority's Carson Energy Facility and McClellan Gas Turbine Facility. Responsibilities included assisting with the development of the pre-audit checklist and field interview forms, conducting field interviews and audits, and assisting with summarizing and presenting findings in the final audit report.

EXHIBIT B-13
DECLARATION OF SARAH MADAMS

Declaration of
Sarah Madams
Carlsbad Energy Center Project
(07-AFC-6)

I, Sarah Madams, declare as follows:

1. I am presently employed by CH2M HILL under contract with Carlsbad Energy Center LLC to provide environmental consulting services for the Carlsbad Energy Center Project ("CECP").
2. A copy of my professional qualifications and experience is attached hereto as Exhibit A and incorporated by reference herein.
3. I caused to be prepared or prepared information for **Waste Management** in support of the Application for Certification ("AFC") for CECP. Such information was based on my independent analysis of data from reliable documents and sources and my professional experience and knowledge. Specifically, I prepared or caused to be prepared the following:
 - a. AFC Waste Management Section 5.14
 - b. Project Enhancement and Refinement Section 5.14
 - c. Data Adequacy Supplement A, Attachment WR-1A (Waste Discharge Requirements)
 - d. Data Responses to:
 - i. California Energy Commission ("CEC") Staff Data Requests, Set 1A, #72-73, including Attachments WR73-1 (Phase II Site Assessment) and WR73-2 (Report on Soil Remediation, Encina Power Plant)
 - ii. CEC Staff Data Requests, Set 2, #112
 - iii. CEC Staff Data Requests, Set 3B, #115
4. It is my professional opinion that the information provided to the California Energy Commission related to the CECP AFC proceeding is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony presented by me and, if called as a witness, could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.



12/9/09

Date

NAME OF WITNESS

EXHIBIT A

Sarah Madams

Hazardous Materials Handling and Waste Management Task Lead

Education

B.S., Environmental Toxicology

Relevant Experience

Ms. Madams has more than 11 years of professional experience including project management, regulatory compliance, permitting, public involvement/ community relations, data collection and analysis, database management, compliance audits, document preparation, and technical writing. For the last 6 years, Ms. Madams has served as the Deputy Project Manager for power plant licensing work performed by CH2M HILL, and is serving as the Project Manager for the Lodi Energy Center and the Almond 2 Power Plant. Her expertise includes working with multidisciplinary teams to assess the environmental impacts of power plant projects on the environment. These assessments include impacts to air, biological and cultural resources, land uses, noise, socioeconomics, public health, water and visual resources, soils and geology, and paleontology.

Representative Projects

Carlsbad Energy Center Project. Prepared the AFC Hazardous Materials and Waste Management sections for the construction of a combined-cycle facility consisting of two natural-gas-fired turbines, heat recovery steam generators, steam turbine generators, and associated equipment.

GWF Energy Tracy Combined Cycle Conversion Project, San Joaquin County, California. Prepared the AFC Hazardous Materials and Waste Management sections for the conversion of an existing peaking plant to a combined-cycle baseload facility consisting of two natural-gas-fired turbines, fired heat recovery steam generators, steam turbine generator, and associated equipment.

Lodi Energy Center, NCPA, San Joaquin County, California. Project Manager for the licensing of this 255-MW combined cycle power plant. Managed a multidisciplinary team of scientists, planners, and engineers in preparing and filing the license application. Submitted FAA Form 7460s and notice criteria tools to FAA. Coordinated efforts between CEC project management, local and state agencies and CH2M HILL staff.

Almond 2 Power Plant, Stanislaus County, California. Project Manager for the licensing of this 174-MW combined cycle power plant. Managed a multidisciplinary team of scientists, planners, and engineers in preparing and filing the license application. Coordinated efforts between CEC project management, local and state agencies and CH2M HILL staff.

Chula Vista Energy Upgrade Project, MMC Energy, San Diego County, California. Deputy Project Manager for the AFC for a 100-MW power plant. Prepared and provided testimony on the waste management, alternatives, worker health & safety and hazardous waste sections of the AFC.

Sarah Madams

Russell City Energy Center Amendment, Calpine, Alameda County, California. Deputy Project Manager for the AFC for a 600-MW power plant. Prepared and provided written testimony for the waste management, alternatives, worker health & safety and hazardous waste sections of the AFC. Coordinated biological and cultural surveys of the project area. Submitted FAA Form 7460s and notice criteria tools to FAA. Addressed multidisciplinary issues received from state and local agencies. Attended public workshops and hearings.

Application for Certification, Los Esteros Critical Energy Facility, Calpine C*Power, San Jose, California. Project Coordinator for the AFC for a 180-MW power plant. The project required the preparation of numerous other studies/documents to satisfy the CEC staff request. These studies/documents included the preparation of a General Plan amendment and planned development zoning applications, archaeological and paleontological survey reports, and biological resource protection permits. Ms. Madams assisted with the development and implementation of biological, cultural, and paleontological resource monitoring programs; risk management plan; and traffic and transportation management plan. The plant is currently in operation.

Application for Certification, Walnut Energy Center, Turlock Irrigation District, California. Project Coordinator for the AFC for a 250-MW combined cycle power plant. She reviewed applications, coordinated multidisciplinary data requests and responses, and coordinated efforts between CEC project management and CH2M HILL staff. Ms. Madams assisted with the development of the security plan and emergency response plan. The plant is currently in operation.

Application for Certification, Salton Sea Unit 6 Geothermal Power Plant, Mid-American Energy Holding Company, Imperial County, California. Project Coordinator for the licensing of the 185-MW geothermal power plant. The power plant design was based on the flash geothermal power plant process, which produces both solid and liquid byproducts that required disposal. The project site was in a rural area of Imperial County, but was adjacent to a National Wildlife Refuge that supports significant populations of avian species. The licensing process involved the review of all environmental areas, and specifically focused on waste disposal, air quality, hazardous materials handling, and biological resources. Ms. Madams was responsible for the development and tracking of data response submittals requested by the CEC. The project was successfully completed, with a license issued by the CEC.

Various Power Plant Applications for Certification (AFCs). Prepared or assisted on the Worker Health and Safety, Hazardous Materials, and Waste Management sections. In addition prepared Field Safety Instructions and Health and Safety Plans for the following power plant Applications for Certification:

- Ivanpah Solar Electric Generating Station
- Eastshore Energy Center
- Carlsbad Energy Center
- San Francisco Electric Reliability Project
- Walnut Creek Energy Park
- Sun Valley Energy Project

Sarah Madams

Air Quality Audits, SMUD, California. Conducted air quality audits of the Central Valley Finance Authority's Carson Energy Facility and McClellan Gas Turbine Facility. Responsibilities included assisting with the development of the pre-audit checklist and field interview forms, conducting field interviews and audits, and assisting with summarizing and presenting findings in the final audit report.

EXHIBIT B-14
DECLARATION OF ROBERT C. MASON

Declaration of
Robert C. Mason
Carlsbad Energy Center Project
(07-AFC-6)

I, Robert C. Mason, declare as follows:

1. I am presently employed by CH2M Hill, Inc. under contract with Carlsbad Energy Center LLC to provide environmental consulting services for the Carlsbad Energy Center Project ("CECP").
2. A copy of my professional qualifications and experience is attached hereto as Exhibit A and incorporated by reference herein.
3. I caused to be prepared or prepared information for the Application for Certification ("AFC") for CECP and subsequent information docketed with the California Energy Commission ("CEC") associated with the AFC proceeding for CECP. Such information was based on my independent analysis of data from reliable documents and sources and my professional experience and knowledge. Specifically, I prepared or caused to be prepared the following:
 - a. Application for Certification for the Carlsbad Energy Center Project (09/11/2007)
 - b. Application to City of Carlsbad for Amendment of the Precise Development/Specific Plans (09/19/2007)
 - c. Data Adequacy Supplement A and Related Attachments (10/24/2007)
 - d. Response to Staff's Issues Identification Report (12/13/2007)
 - e. Applicant's PowerPoint Presentation from Site Visit and Informational Hearing (12/19/2007)
 - f. Applicant's Response to Questions from Wesley Marx, Carlsbad Resident (02/01/2008)
 - g. All Data Responses to the California Energy Commission Staff, San Diego County Air Pollution Control District, City of Carlsbad, Power of Vision, and Center for Biological Diversity (Various Dates, 2007-2009)
 - h. Applicant's Offsite Alternatives Analysis (04/17/2008)
 - i. Site Preparation & Construction Stormwater Management & Pollution Prevention Plan (04/29/2008)
 - j. Project Enhancement and Refinement Document (07/25/2008)
 - k. Applicant's Fire Risk and Emergency Response Assessment Report (11/7/2008)
 - l. Applicant's Response to CURE's Document Request (11/17/2008)
 - m. Applicant's Objections to Center for Biological Diversity's Data Requests (10/23/2008)
 - n. Applicant's Response to Center for Biological Diversity's Petition for Order Directing Responses to Data Requests (11/20/2008)
 - o. Correspondence to SDAPCD re Mailing of Notice of Preliminary Determination of Compliance (12/10/2008)

- p. Applicant's Record of Conversation with the California Department of Fish & Game (12/29/2008)
 - q. Applicant's Comments to SDAPCD on the Preliminary Determination of Compliance (01/02/2009)
 - r. Applicant's Comments to the Preliminary Staff Assessment (01/30/2009)
 - s. Fire Code Compliance Table, CECP Fire/Emergency Site Access Routes Diagram, and Related Correspondence to City of Carlsbad (03/13/2009)
 - t. Supplemental Fire Risk Assessment (04/24/2009)
 - u. Applicant's Response to the City of Carlsbad re the City's Proposed Ordinance CS-067 (Moratorium) (10/27/2009)
 - v. Correspondence to the Mayor of Carlsbad and Council Members re the City's Proposed Ordinance CS-067 (Moratorium) (10/27/2009)
 - w. Applicant's Testimony Regarding Final Staff Assessment Conditions of Certification for Traffic and Transportation (12/15/2009)
 - x. Applicant's Testimony Regarding Final Staff Assessment Conditions of Certification for Soil & Water (12/15/2009)
4. In addition to those documents prepared by me or at my direction, I have reviewed and am familiar with following documents also related to the CEC AFC proceeding and submitted to the CEC accordingly:
- a. All Status Reports for the Project (Various Dates 2007-2009)
 - b. All Correspondence to Staff Forwarding Letters in Support of CECP and Articles and Editorials related to the Project (Various Dates 2007-2009)
 - c. All Briefs in Support of Applicant's Legal Positions (Various Dates 2007-2009)
 - d. Applications for Confidential Treatment of Documents and related Responses to Executive Director Jones Regarding Air Quality and Cultural Resources Records (04/09/2009, 05/19/2009, and 10/23/2007, respectively)
 - e. Applicant's Response to City of Carlsbad's April 25 Memorandum (05/07/2008)
 - f. County of San Diego's Approval of Sampling Work Plan (08/12/2008)
 - g. Letter Related to California Coastal Commission's Non-Participation in AFC Proceeding (08/25/2008)
 - h. Request for Easements for Vista/Carlsbad Interceptor Sewer Replacement Project (10/30/2008)
 - i. Correspondence from San Diego Regional Water Quality Control Board Informing CECP that its National Pollutant Discharge Elimination System Permit is Complete (11/04/2008)
 - j. Correspondence from SDG&E re 230kV Switchyard Expansion (11/20/2008)
 - k. Correspondence to SDAPCD from Michael Carroll (NRG) re SDAPCD, Rule 20.3(e)(1) Statewide Compliance Certification (03/13/2009)
 - l. Request for Change to Project Proceeding's Proof of Service (04/08/2009)
 - m. Correspondence re Elimination of Dual Fuel Requirement (04/09/2009)
5. It is my professional opinion that the information provided to the California Energy Commission related to the CECP AFC proceeding is valid and accurate with respect to the issues addressed therein.

6. I am personally familiar with the facts and conclusions related in the testimony presented by me and, if called as a witness, could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dec 14, 2007
Date

Robert C. Mason
Robert C. Mason

EXHIBIT A

Robert Mason
Senior Project Director
CH2M HILL, Inc.

Education

M.A., Urban and Regional Studies

B.A., Urban and Regional Studies

Distinguishing Qualifications

- Expert in the strategic implementation of the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) for complex projects
- Extensive experience for the licensing and permitting of combined-cycle and simple-cycle, natural-gas-fired power plants, including direct experience with the California Energy Commission (CEC)
- Experienced in environmental permitting process and permit acquisition from federal, state, and local regulatory agencies
- Experienced in regulatory and environmental compliance
- Routinely interacts with local, state, and federal agencies; and public interest groups during the environmental analysis and permitting process

Relevant Experience

Mr. Mason is a senior environmental project director with more than 30 years of experience in program management for the planning, permitting, and environmental analysis/compliance for multimillion dollar industrial, energy, institutional, solid waste, and government projects. His responsibilities include management of multidisciplinary technical teams for collection and analysis of data; preparation of supporting documents for construction and operational permits; negotiation with regulatory agencies regarding permit conditions; preparation of CEQA and NEPA documents; and preparing and making presentations to clients, regulatory agencies, elected and appointed boards, and the public. Mr. Mason also directs teams in the development of environmental compliance program for power generation facilities, industrial projects, including solid waste and hazardous waste landfills and treatment facilities.

Representative Projects

Application for Certification for the Carlsbad Energy Center Project in Carlsbad, San Diego County, California. Directed the preparation of the Application for Certification (AFC) for the NRG Carlsbad Energy Center Project and permitting/licensing of the project through the CEC. This 540-megawatt (MW), combined-cycle, natural-gas-fired replacement

generation project at the Encina Power Station was filed with the CEC in September 2007. The CEC licensing process is ongoing with the CEC Final Staff Assessment (FSA) expected in August 2009. The AFC, which is a CEQA equivalent document under California regulation, included the analysis of field study of the full range of environmental issues, including marine and terrestrial biology, land use, geology and soils, water resources, traffic, noise, air quality and health risk, cultural resources, hazardous materials management, waste management, worker safety, and socioeconomics. Directed a multidisciplinary technical team through the preparation of the AFC, and the licensing process with the CEC.

Application for Certification for the South Bay Power Plant Replacement Project in Chula Vista, San Diego County, California. Directed the preparation of the Application for Certification (AFC) for the LS Power South Bay Replacement Project and permitting/licensing of the project through the CEC. This 640-megawatt (MW), combined-cycle, natural-gas-fired replacement generation project at the South Bay Power Plant was filed with the CEC in June 2006. The AFC included the analysis of field study of the full range of environmental issues, including marine and terrestrial biology, land use, geology and soils, water resources, traffic, noise, air quality and health risk, cultural resources, hazardous materials management, waste management, worker safety, and socioeconomics. Directed a multidisciplinary technical team through the preparation of the AFC, and the licensing process with the CEC. Based on a business decision by LS Power, this project was withdrawn from the CEC licensing process.

Application for Certification for the Moss Landing Power Plant in Monterey County, California. Directed the preparation of the AFC for the Duke Energy Moss Landing Power Plant and permitting/licensing of the project through the CEC. This 1,200-megawatt (MW), combined-cycle, natural-gas-fired expansion of the existing power plant at Moss Landing was licensed by the CEC in October 2000 with groundbreaking occurring in mid-November 2000. The project began commercial generation of power in June 2002. The AFC included the analysis of field study of the full range of environmental issues, including marine and terrestrial biology, land use, geology and soils, water resources, traffic, noise, air quality and health risk, cultural resources, hazardous materials management, waste management, worker safety, and socioeconomics. Directed a multidisciplinary technical team through the preparation of the AFC, and the licensing hearings with the CEC.

Application for Certification for the Morro Power Plant in San Luis Obispo County, California. Directed the preparation of the AFC and permitting/licensing of the project through the CEC. This 1,200-MW, combined-cycle, natural-gas-fired upgrade of the existing power plant at Morro Bay is completing its licensing process through the CEC in the summer of 2003. The AFC included the analysis of field study of the full range of environmental issues, including marine and terrestrial biology, land use, geology and soils, water resources, traffic, noise, air quality and health risk, cultural resources, hazardous materials management, waste management, worker safety, and socioeconomics. Directed a multidisciplinary technical team through the preparation of the AFC, and the licensing hearings with the CEC.

EXHIBIT B-15
DECLARATION OF DIEP NGUYEN

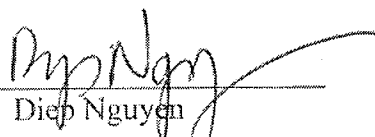
Declaration of
Diep Nguyen
Carlsbad Energy Center Project
(07-AFC-6)

I, Diep Nguyen, declare as follows:

1. I am presently employed by DTN Engineers Inc. under contract with Carlsbad Energy Center LLC via Patch Services via CH2MHill to provide environmental consulting services for the Carlsbad Energy Center Project ("CECP").
2. A copy of my professional qualifications and experience is attached hereto as Exhibit A and incorporated by reference herein.
3. I caused to be prepared or prepared information for **Worker Health and Safety** in support of the Application for Certification ("AFC") for CECP. Such information was based on my independent analysis of data from reliable documents and sources and my professional experience and knowledge. Specifically, I prepared or caused to be prepared the following:
 - a. Fire Risk and Emergency Response Assessment Report
4. It is my professional opinion that the information provided to the California Energy Commission related to the CECP AFC proceeding is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony presented by me and, if called as a witness, could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

December 14, 2009
Date



Diep Nguyen

EXHIBIT A

PATCH SERVICES LLC



Engineering
California

Construction
Texas

Diep Nguyen, P.E.
SR. ELECTRICAL ENGINEER

EDUCATION

- BS Electrical Engineering, San Francisco State University
- MS Electrical Engineering, Santa Clara University
- Graduate Studies, Santa Clara University

PROFESSIONAL REGISTRATION

- California, Electrical Engineer, E-10867 (plus 5 additional states)
- California, Control Systems, CS-7072
- California Fire Protection Engineer, FP-1317

PROFESSIONAL AFFILIATIONS

- Institute of Electrical and Electronics Engineers, Senior Member, Region 6 Past EXCOM Officer
- Instrument Society of America, Senior Member, Past President
- Oakland/East Bay Power Engineering Society, Member, Region 6 Representative, Past Chairman
- Society of Fire Protection Engineers, Past Member
- NFPA 820 Technical Committee, Past Principal Member

PROFESSIONAL EXPERIENCE

Mr. Diep T. Nguyen has over 32 years of practical experience and has provided hands-on electrical, instrumentation and control system design and construction startup support services in many large wastewater and water projects, power plants, high-rise buildings, data processing centers, airport terminals, hospitals and institutions.

Mr. Nguyen's expertise includes the design and specifications of electrical systems including low (480V) and medium (up to 115KV) voltage power distribution, system grounding, low and medium voltage variable frequency drives, lighting, fire alarm and security systems, computer power centers, underground duct bank systems, emergency and standby power systems, Photovoltaic (PV) Systems, and uninterruptible power supply (UPS) systems. He is also

responsible for complete design and specifications of process instrumentation and control systems ranging from programmable logic controller (PLC) and Human Machine Interface (HMIs) networks, supervisory control and data acquisition (SCADA) systems to conventional Distributed Control System (DCS) to Personal Computer (PC) –based control systems which include software engineering and computer network configuration.

PUBLICATIONS and PRESENTATIONS

- “Annual Electrical/Instrumentation conference, San Ramon, California.
- “Everything you ever want to know about Electrical Standards for Industrial Machinery- ANSI/NFPA 79.” 2000 CWEA Annual Electrical/Instrumentation Conference, San Ramon California.
- “Recommended pump controls for wastewater and water treatment facilities.” 2001 CWEA Annual Electrical/Instrumentation Conference, San Ramon California.
- “Load Management Systems.” Costa Mesa CA 2002 IAS Meeting
- “Power System Reliability- A case study.” 2002 Guest lecturer- International Technological University, Santa Clara, California
- “Electrical PE Exam Review Course” 2002 Guest lecturer/Organizer- IEEE SF PES/ SF PACE/ OEB PES, Oakland, California.
- “Innovative electrical controls” 2002 CWEA Annual Electrical/Instrumentation Conference, San Ramon, California
- “SCADA basics and future trends” 2003 CWEA Training Conference, Berkeley, California
- “How to be indispensable during worsening economic downturns” 2003 International Technological University (ITU)-Graduate Seminar Lecture, Santa Clara, California.
- “Introduction to control systems engineering for wastewater facilities” 2003 SFPUC South East Water Pollution Control Plant San Francisco, CA.
- “The Do’s and Don’ts of VFD Design and Installation” AEE-IEEE PES Joint meeting 2003 Oakland, CA
- “NFPA 110- Standard for Emergency and Standby Power Systems 2002 Edition” IEEE PES Meeting 2004 Oakland, CA
- “Performing community services can further enhance your future career” 2005, 2006 ITU – Graduate Seminar Lectures, Sunnyvale, CA
- “Power Factor and Energy Savings for wastewater facilities” 2007 CWEA Conference Berkeley CA.

EXHIBIT B-16
DECLARATION OF GEORGE PIANTKA

Declaration of
George Piantka
Carlsbad Energy Center Project
(07-AFC-6)

I, George Piantka, declare as follows:

1. I am presently employed by Carlsbad Energy Center LLC ("Applicant") as the permitting project manager for the Carlsbad Energy Center Project ("CECP" or the "Project").
2. A copy of my professional qualifications and experience is attached hereto as Exhibit A and incorporated by reference herein.
3. I caused to be prepared or prepared information in support of the Application for Certification ("AFC") for CECP. Such information was either provided by me to consultants for incorporation of such data into documents or based on my independent analysis of data from reliable documents and sources, as well as my professional experience and knowledge. Specifically, I prepared or caused to be prepared the following:
 - a. Correspondence re Preparation of the Application for Certification (07/05/2007)
 - b. Application for Certification for the Carlsbad Energy Center Project (09/11/2007)
 - c. Application to City of Carlsbad for Amendment of the Precise Development/Specific Plans (09/19/2007)
 - d. Data Adequacy Supplement A and Related Attachments (10/24/2007)
 - e. Response to Staff's Issues Identification Report (12/13/2007)
 - f. Applicant's PowerPoint Presentation from Site Visit and Informational Hearing (12/19/2007)
 - g. Applicant's Response to Questions from Wesley Marx, Carlsbad Resident (02/01/2008)
 - h. All Data Responses to the California Energy Commission Staff, San Diego County Air Pollution Control District, City of Carlsbad, Power of Vision, and Center for Biological Diversity (Various Dates, 2007-2009)
 - i. Applicant's Offsite Alternatives Analysis (04/17/2008)
 - j. Site Preparation & Construction Stormwater Management & Pollution Prevention Plan (04/29/2008)
 - k. Project Enhancement and Refinement Document (07/25/2008)
 - l. Applicant's Fire Risk and Emergency Response Assessment Report (11/7/2008)
 - m. Applicant's Response to CURE's Document Request (11/17/2008)
 - n. Applicant's Objections to Center for Biological Diversity's Data Requests (10/23/2008)

- o. Applicant's Response to Center for Biological Diversity's Petition for Order Directing Responses to Data Requests (11/20/2008)
 - p. Correspondence to SDAPCD re Mailing of Notice of Preliminary Determination of Compliance (12/10/2008)
 - q. Applicant's Record of Conversation with the California Department of Fish & Game (12/29/2008)
 - r. Applicant's Comments to SDAPCD on the Preliminary Determination of Compliance (01/02/2009)
 - s. Applicant's Comments to the Preliminary Staff Assessment (01/30/2009)
 - t. Fire Code Compliance Table, CECP Fire/Emergency Site Access Routes Diagram, and Related Correspondence to City of Carlsbad (03/13/2009)
 - u. Supplemental Fire Risk Assessment (04/24/2009)
 - v. Applicant's Response to the City of Carlsbad re the City's Proposed Ordinance CS-067 (Moratorium) (10/27/2009)
 - w. Correspondence to the Mayor of Carlsbad and Council Members re the City's Proposed Ordinance CS-067 (Moratorium) (10/27/2009)
 - x. Applicant's Testimony regarding Final Staff Assessment Conditions of Certification for Land Use
 - y. Applicant's Testimony regarding Final Staff Assessment Conditions of Certification for Worker Safety
4. In addition to those documents prepared by me or at my direction, I submitted or caused to be submitted into the record the following documents related to the Project:
- a. All Status Reports for the Project (Various Dates 2007-2009)
 - b. All Correspondence to Staff Forwarding Letters in Support of CECP and Articles and Editorials related to the Project (Various Dates 2007-2009)
 - c. All Briefs in Support of Applicant's Legal Positions (Various Dates 2007-2009)
 - d. Applications for Confidential Treatment of Documents and related Responses to Executive Director Jones Regarding Air Quality and Cultural Resources Records (04/09/2009, 05/19/2009, and 10/23/2007, respectively)
 - e. Applicant's Response to City of Carlsbad's April 25 Memorandum (05/07/2008)
 - f. County of San Diego's Approval of Sampling Work Plan (08/12/2008)
 - g. Letter Related to California Coastal Commission's Non-Participation in AFC Proceeding (08/25/2008)
 - h. Request for Easements for Vista/Carlsbad Interceptor Sewer Replacement Project (10/30/2008)
 - i. Correspondence from San Diego Regional Water Quality Control Board Informing CECP that its National Pollutant Discharge Elimination System Permit is Complete (11/04/2008)
 - j. Correspondence from SDG&E re 230kV Switchyard Expansion (11/20/2008)

- k. Correspondence to SDAPCD from Michael Carroll (NRG) re SDAPCD, Rule 20.3(e)(1) Statewide Compliance Certification (03/13/2009)
 - l. Request for Change to Project Proceeding's Proof of Service (04/08/2009)
 - m. Correspondence re Elimination of Dual Fuel Requirement (04/09/2009)
5. It is my professional opinion that the information provided to the California Energy Commission related to the CECF AFC proceeding is valid and accurate with respect to the issues addressed therein.
6. I am personally familiar with the facts and conclusions related in the testimony presented by me and, if called as a witness, could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

12/14/09
Date

George Piantka
George Piantka

EXHIBIT A

GEORGE L. PIANTKA, PE

DIRECTOR, ENVIRONMENTAL BUSINESS – WEST REGION

AREAS OF EXPERTISE

- Program & Project Management
- Multi-Media Permitting and Discharge Compliance
- Regulatory Compliance
- Remedial Investigations/Feasibility Studies
- Site Closure Plans and Reports
- Remediation Design/Operation and Maintenance
- Environmental Site Assessments: Phase I and II
- Preliminary Endangerment Assessments
- Water Resource Management
- Risk Assessments

REGISTRATION

Registered Civil Engineer:
California, No. C59171
1999

PROFESSIONAL HISTORY

NRG Energy, Inc., West Region, Regional Environmental Manager, 2007 - present

Essentia Management Services LLC, Long Beach, CA. Senior Consultant, 2002 – 2006

URS Corporation (including

EXPERIENCE OVERVIEW

Mr. George Piantka is Director of Environmental Business for NRG Energy, Inc. West Region. Mr. Piantka has 22 years of extensive experience in multi-media permitting and compliance through State and local agencies. He has focused extensively on the energy sector since 1997, permitting power development projects following California Environmental Quality Act (CEQA) equivalent processes through CA Energy Commission and local/City agencies and renewing water and air discharge permits in accordance with CAA and CWA. He has prepared West Asset Retirement Obligations estimates and managed/directed subsurface liability evaluations at the respective California assets in accordance with State/Cal EPA and local City and County requirements. He has overseen/advised on compliance activities for West assets and has prepared/certified Spill Prevention, Control and Countermeasure (SPCC) documents and Storm Water Pollution Prevention Plans (SWPPP). While Director, West assets have showed continuous improvement in environmental key performance indicators and have been recognized for environmental, ecological and community.

Prior to employment at NRG, Mr. Piantka has managed/conducted soil and groundwater investigations, environmental engineering and remediation, compliance and permitting services, and contaminated sediment studies. He has been project manager of numerous Environmental Site Assessments (ESAs), Remedial Investigations, Feasibility Studies, and Corrective Action/Remedial Action programs for public and private sector clients, with particular emphasis on Power and Port facilities. He has designed and managed numerous soil and groundwater remediation programs and has effectively negotiated site closures with regulatory agencies.

Mr. Piantka is particularly adept at managing fast tract, multi-discipline programs typical of development and due diligence projects. As recent examples, Mr. Piantka conducted due diligence investigations at five Southern California power plants formerly owned by Southern California Edison. He has served as project manager, contributing technical lead and contributing author on several Applications for Certification filed with the California Energy Commission.

Mr. Piantka has conducted numerous environmental compliance audits for industrial facilities throughout California. These audits have included preparation of air toxics inventory plans, review of hazardous waste treatment operations and permitting requirements, and preparation of SWPPPs and monitoring plans. Mr. Piantka has managed and certified storm water monitoring programs for commercial and industrial facilities in accordance with specific National Pollutant Discharge Elimination System (NPDES) Permits and General Orders for Non-Point Discharges. He has also prepared, inspected and certified SPCC Plans for qualifying facilities in accordance with U.S. Environmental Protection Agency and local agencies who oversee SPCC regulations.

Mr. Piantka's representative project experience includes:

- January 2007 to present, Mr. Piantka has served as Regional Environmental Manager for NRG's West Region. In that role he has served as Permitting Project Manager for the Carlsbad Energy Center Project and El Segundo Power Redevelopment Project. In that role, he has been responsible for permitting the projects through the California Energy Commission process, including and

GEORGE L. PIANTKA, PE

DIRECTOR, ENVIRONMENTAL BUSINESS – WEST REGION

former Woodward-Clyde Consultants), Santa Ana and Santa Barbara, CA. Project Engineer to Senior Project Engineer/Group Manager, 1995 – 2002

PSI (as former GeoResearch), Long Beach, CA. Project Engineer/Scientist. 1992 – 1994

ICF Kaiser Engineers, Oakland, San Francisco, and Los Angeles, CA. Staff to Assistant Project Manager. 1988 - 1992

EDUCATION

University of Southern California, Los Angeles, California, M.S. Environmental Engineering, 1993

University of California, Berkeley, Berkeley, California, B.S. Chemistry, 1987

AFFILIATIONS

Harbor Association of Industry & Commerce Board Member

associated data responses and compliance with Conditions of Certification for the projects.

- January 2007 to present, Mr. Piantka has overseen compliance for West assets, including the Encina Power Station, El Segundo Generating Station, Long Beach Generating Station, San Diego County combustion turbines, and Saguaro power station in southern Nevada.
- Prior to joining NRG, from 1997 through 2006, Mr. Piantka served as a Project Manager for numerous environmental programs at two NRG Energy, West Region Power Generating Stations in Southern California. Currently, Mr. Piantka is the Compliance Manager for the El Segundo Power Redevelopment Project responsible for assuring that El Segundo Power II complies with the Conditions of Certification issued by the California Energy Commission (Commission) for the repowering project. In that role, Mr. Piantka manages the content, production, and submittal schedule of compliance documents intended to meet air quality, biology, cultural, geology, hazardous materials, land use, noise, paleontological, water quality, waste management, and worker safety requirements prior to and during the construction of new power generating at El Segundo Generating Station.

For El Segundo and Long Beach Generating Stations, Mr. Piantka prepared and certified SPCC Plans. Mr. Piantka also updated and certified the SWPPPs for these generating stations.

During 1999 and 2000 for El Segundo Generating Station, Mr. Piantka served as Task Manager for Hazardous Materials and Waste Management sections of the Application for Certification (AFC) for the repower of this power plant in accordance with California Energy Commission. For the AFC, Mr. Piantka served as Project Manager for pre-construction remedial investigations, tank closures, construction dewatering, NPDES permitting and groundwater treatment. He also prepared an NPDES Permit for the proposed dewatering program at this power plant. During 1997 and 1998, Mr. Piantka served as Project Manager for Additional Buyer's Due Diligence Investigations, which entailed the evaluation of environmental liabilities at the El Segundo and Long Beach Generating Stations for NRG/Dynegy. He conducted extensive soil and groundwater investigation to support the acquisition of the El Segundo and Long Beach Generating Stations by NRG/Dynegy from SCE.

- From 1999 to present, Mr. Piantka has served as Project Manager for the Resource Conservation and Recovery Act (RCRA) Facility Investigations (RFI) and RCRA Closure Plans of former hazardous waste treatment units and other areas of concern under the direction of the Department of Toxic Substances Control (DTSC) for the Redondo Generating Station, in Redondo Beach California. Mr. Piantka has implemented a groundwater monitoring program to assess groundwater impacts associated with the hazardous waste treatment units. He has also prepared and implemented aboveground tank closure work plans, and conducted extensive soil and groundwater assessments at other areas of concern within areas proposed for potential redevelopment, including fuel oil pump stations areas, underground storage tank areas, power generation areas and switchyards. He has also conducted screening level risk assessments. During 1998, Mr. Piantka assisted with the Additional Buyer's Due Diligence

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Investigation, which entailed the evaluation of environmental liabilities at the Redondo Beach Generating Station for AES Corporation. He conducted extensive soil and groundwater investigation to support the acquisition of the Redondo Beach Generating Stations by AES from Southern California Edison (SCE).

- From 1999 to present, Mr. Piantka has served as a Project Manager on a number of initial site assessments and remedial investigations for Los Angeles Department of Water and Power (LADWP) facilities throughout California. Among the projects, Mr. Piantka conducted extensive assessments of water and sediment quality at two reservoir sites. One reservoir assessment entailed implementation of numerous sampling techniques to assess sediment accumulation rates and quality, including the use of a hand-held XRF detector for metals analysis and the collection of sediment from core samples for a boat. Also evaluated sediment management alternatives as part of O&M of the reservoir and evaluated hydraulic improvement options for short- and long-term modifications to the reservoir. Recently, Mr. Piantka completed two initial site assessments for the evaluation of soil foundations at two proposed new administration buildings sites at current LADWP maintenance facilities. Mr. Piantka also reviewed remedial investigation/ feasibility studies (RI/FSS) prepared for a LADWP generating station and a gravel pit site in Los Angeles County.
- From 1998 to 2000, Mr. Piantka served as Project Manager for the assessment of a Kern County oil field for PG&E National Energy Group. Responsibilities included performing ESAs at a planned power plant site and the associated transmission and pipeline corridors in western Kern County, California. Project tasks included preparation of Phase I ESAs for the power plant site and proposed property acquisitions along transmission and pipeline corridors located on agricultural and oil field properties. He conducted Phase II ESAs of impacted properties and developed mitigation measures for the power plant site and along proposed pipeline routes that traversed oil fields. Mr. Piantka also prepared soil management plans to mitigate detected contamination.
- From 1999 to 2000, Mr. Piantka served as Project Manager for the assessment of a planned power plant site and the associated transmission and pipeline corridors in southern Kern County, California. Project tasks included preparation of Phase I ESAs for the power plant site and proposed property acquisitions along transmission and pipeline corridors located on agricultural and oil field properties. He conducted Phase II ESAs of impacted properties and developed mitigation measures for the power plant sites and along proposed pipeline routes that traversed oil fields. Mr. Piantka also prepared soil management plans to mitigate detected contamination.
- From 1999 to 2000, Mr. Piantka served as Project Manager for ESAs at a proposed power plant and the adjacent site in western Arizona on behalf of PG&E National Energy Group. Project tasks included preparation of Phase I ESAs for the power plant site and proposed property acquisitions along transmission and pipeline corridors located on agricultural properties. Mr. Piantka conducted limited Phase II ESAs of the agricultural properties and

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valuated remedial alternatives and costs associated with detected contamination at vehicle maintenance areas within the agricultural properties.

- From 1995 to present, Mr. Piantka has served as a Project Manager for site assessments, remedial action plans, and remedial action at more than 20 Port of Los Angeles sites. Duties included conducting an RI/FS of contaminated sediments at a former ship yard on Terminal Island and evaluating disposal options for metals-impacted sediments. Mr. Piantka also served as Project Manager for environmental tasks associated with the demolition of two contiguous Berths and the management of excavated soil and dredged sediments associated with the construction of a new wharf at a former wood (creosote) treatment plant. He prepared engineering specifications for a sheet pile wall used as a shallow groundwater barrier, designed and installed additional groundwater monitoring wells, and conducted quarterly groundwater monitoring. Mr. Piantka also prepared and implemented a remedial action plan that led to the site closure of a former underground storage tank (UST) site.
- From 2000 to 2004, Mr. Piantka served as Project Manager for the Operation & Maintenance of remediation systems designed to mitigate volatile organic compounds (VOCs) in soil and groundwater and chromium in groundwater for Goodrich Corporation in Burbank, California. He also conducted remedial design and construction management of ion exchange and reverse osmosis treatment systems to treat hexavalent chromium in groundwater. Mr. Piantka prepared quarterly remediation progress reports and NPDES monitoring reports for Los Angeles Regional Water Quality Control Board (RWQCB) review. He also prepared a Remedial Investigation work plan in response to a Cleanup and Abatement Order assigned to this site.
- From 1999 to 2002, Mr. Piantka served as Project Manager for the preparation of responses to Waste Discharge Requirements (WDRs) for process and storm water runoff at the Pictsweet Mushroom Farm located in Ventura, California. As part of the response to the WDRs, Mr. Piantka designed a storm water retention basin intended to achieve zero discharge of storm water and process water at the farm.
- From 1999 to 2000, Mr. Piantka served as the engineer of record for the performance of a Safety Audit; preparation of a Process Safety Manual; and modification of the Risk Management Plan prepared for Venoco's gas process facility in Carpinteria, California. The documents were prepared in accordance with Venoco's California Accidental Release Program.
- From 1998 to 2001, Mr. Piantka served as Project Manager for RFI and Closure Assessments at three facilities at Naval Base Ventura County in Port Hueneme, California. He also served as Project Manager for an ESA of a proposed modification of natural drainage and creeks at Naval Base Ventura County, including preparation of the 404 permit for this project.
- During 2000 and 2001, Mr. Piantka worked on a confidential UST Remediation Project in Santa Barbara, CA. Mr. Piantka augmented a soil vapor extraction (SVE) program through the addition of multiple air sparging wells. An

GEORGE L. PIANTKA, PE

DIRECTOR, ENVIRONMENTAL BUSINESS – WEST REGION

improvement in hydrocarbon recovery was noted during the 6-month program.

- From 1998 to 2000, Mr. Piantka managed site assessment activities at a UST Site in Santa Barbara, CA for Jordano's. Mr. Piantka employed Cone Penetrometer Test and Hydropunch technologies to assess the stratigraphy and delineate vertically and laterally the extent of methyl tert-butyl ether (MTBE) in multiple perched groundwater zones.
- From 1995 to 1997, Mr. Piantka managed O&M of a soil and groundwater remediation system at a Mobil UST Remediation Site in Long Beach, CA. Responsibilities included quarterly groundwater monitoring and monthly NPDES monitoring. Cleanup objectives were met and closure was granted by the RWQCB.
- From 1995 to 1997, Mr. Piantka managed tank closure and reporting activities at several Yellow Freight facilities in California. Mr. Piantka managed interim corrective action measures at Orange and Gardena, California sites, whereby UST areas were over excavated and confirmation samples collected to confirm that clean-up goals were met.
- From 1996 to 1998, Mr. Piantka served as Project Manager for the RI of a 160,000-gallon fuel release and O&M of the LNAPL and vapor-phase remediation system along a petroleum hydrocarbon pipeline on behalf of ARCO Pipeline in Long Beach, CA. He utilized field techniques to quickly assess the stratigraphy and the extent of dissolved phase aromatic hydrocarbons in multiple saturated zones. Mr. Piantka also managed quarterly groundwater monitoring, sampling and reporting requirements for the site.
- From 1995 to 1998, Mr. Piantka served as Project Manager for subsurface investigations and free-phase removal at bulk fuel storage facility on behalf of ARCO Pipeline at the Port of Long Beach, CA. He designed and implemented the upgraded free-phase removal system to incorporate additional recover wells installed as part of site investigation activities. Mr. Piantka also managed quarterly groundwater monitoring, sampling and reporting requirements for the site.
- From 1995 to 2001, Mr. Piantka served as Project Manager for several RIs at Caltrans maintenance stations sites in central and Southern California, including Stockton, Bear Valley, and Glennville. He conducted pilot tests and screening level risk assessments as part of the evaluation of feasible remedial alternatives. Mr. Piantka also presented results to local County Health Departments and RWQCB staff and negotiated site closures, where appropriate.
- From 1995 to 2002, Mr. Piantka served as Project Manager for a 30,000-gallon spill at a service station in Lancaster, California. He managed the California State Reimbursement program and provided litigation support for the pending case against the responsible party. Mr. Piantka also worked with the client's risk management staff to implement cost recovery strategies. Total cost recovery

GEORGE L. PIANTKA, PE

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was approximately \$1.5M.

- From 1992 to 1995, Mr. Piantka managed a dozen site assessment and interim removal actions at active and closed service station sites throughout California on behalf of Unocal. At some of the sites, SVE tests were conducted and FSs prepared to evaluate remedial alternatives. Mr. Piantka also managed the UST Reimbursement programs for Unocal, which entailed the preparation and submittal of reimbursement applications for approximately 250 service station sites in California and Arizona.
- In 1993, Mr. Piantka conducted an RI/FS for a former metal plating facility in Ontario, CA. The extent of nickel and chromium contamination in soil was evaluated and viable remediation alternatives to mitigate the metals-impacted soil were ranked.
- From 1992 to 1995, Mr. Piantka managed several assessments, SVE tests, remediation design/build, and O&M programs at active and closed service station sites throughout central and Southern California on behalf of Texaco.
- During 1991, as part of the divestiture of numerous properties in default, Mr. Piantka conducted approximately 50 due diligence Phase I ESAs for Resolution Trust Corporation. Property uses ranged from multiple-dwelling residences to commercial/industrial properties.
- During 1992, Mr. Piantka conducted an assessment of methane and hydrogen sulfide concentrations in Metro Rail Red Line tunnels in downtown Los Angeles, CA. The investigation was conducted at various hours around the clock. The results of the investigation were used to improve the gas monitoring systems in the tunnels.
- During 1991, Mr. Piantka conducted an Air SWAT to map areas with detectable concentrations of hydrocarbons in near-surface soils at a TCL Dump Site at the Port of Long Beach, CA. Areas of elevated concentrations were further evaluated. Remediation phases have been completed; the site is now used for container storage.
- From 1990 to 1992, Mr. Piantka conducted site assessments and remediation pilot testing, and prepared RCRA closure reports for several operable units at a defense contractor facility for United Technologies, San Jose, California.
- From 1988 to 1992, Mr. Piantka managed tank removal/closure activities and conducted site assessments at several Ford Motor Company facilities in California, Oregon and Washington.
- From 1988 to 1992, Mr. Piantka managed tank removal/closure activities and conducted site assessments at active and closed United States Postal Service sites in Southern and Northern California.

GEORGE L. PIANTKA, PE

DIRECTOR, ENVIRONMENTAL BUSINESS – WEST REGION

- From 1988 to 1991, Mr. Piantka conducted groundwater monitoring and RIs to assess the extent of diesel- and gasoline-impacted soil and groundwater, on behalf of AC Transit, Alameda and Contra Costa Counties. Mr. Piantka also contributed to an emergency response program designed to assess the extent of diesel-impacted soil and sediment following a diesel fuel.
- Mr. Piantka conducted PEAs at Northern California sites under the U. S. Environmental Protection Agency, Region IX ARCS contract. Sites ranged in uses, but were generally abandoned industrial sites.
- From 1988 to 1992, Mr. Piantka has served as technical lead of Hazardous Materials and Wastes Assessments for proposed transportation improvement projects in Honolulu, HI; Oakland, CA; Sacramento, CA; and San Diego, CA. For each of these projects, Mr. Piantka conducted corridor studies whereby potential environmental concerns were evaluated, and rough order of magnitude costs were developed to mitigate environmental concerns.

EXHIBIT B-17
DECLARATION OF JAMES ROLDAN

Declaration of
James Roldan
Carlsbad Energy Center Project
(07-AFC-6)

I, James Roldan, declare as follows:

1. I am presently employed by CH2M HILL under contract with Carlsbad Energy Center LLC to provide environmental consulting services for the Carlsbad Energy Center Project ("CECP").
2. A copy of my professional qualifications and experience is attached hereto as Exhibit A and incorporated by reference herein.
3. I caused to be prepared or prepared information for **Traffic & Transportation** in support of the Application for Certification ("AFC") for CECP. Such information was based on my independent analysis of data from reliable documents and sources and my professional experience and knowledge. Specifically, I prepared or caused to be prepared the following:
 - a. AFC Traffic & Transportation Section 5.12;
 - b. Project Enhancement and Refinement Section 5.12;
 - c. Data Adequacy Supplement A
 - d. Data Responses to:
 - i. City of Carlsbad Data Requests, Set 1A, #57
 - ii. California Energy Commission ("CEC") Staff Data Requests, Set 2, #98-103
4. It is my professional opinion that the information provided to the California Energy Commission related to the CECP AFC proceeding is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony presented by me and, if called as a witness, could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

12.7.09
Date

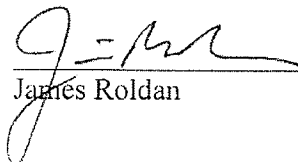

James Roldan

EXHIBIT A

James Roldan
Project Planner

Education

M.S., Civil Engineering, University of California, Irvine, 1998
B.S., Civil Engineering, University of California, Irvine, 1997

Professional Registrations

Professional Engineer: California (2008, No. 2482)

Distinguishing Qualifications

- Formerly held positions as Assistant Resident Engineer, Construction, for California Department of Transportation (Caltrans) District 12, and Transportation Engineering Associate for Los Angeles Department of Transportation (LADOT)
- Extensive Caltrans experience including knowledge of their processes and tools

Relevant Experience

Mr. Roldan is a civil engineer and a project planner in CH2M HILL's Southern California office with over 10 years of experience in transportation and traffic engineering. His experience includes working on a number of task orders for Caltrans and Riverside County Transportation Commission (RCTC) projects.

Representative Projects and Dates of Involvement

Traffic and Transportation Analyst; Carlsbad Energy Center Project; Carlsbad, California. Prepared the Traffic and Transportation section of California Energy Commission Application for Certification for the construction of a combined-cycle facility consisting of two natural-gas-fired turbines, heat recovery steam generators, steam turbine generators, and associated equipment.

Transportation Engineer; Alternatives Analysis and Traffic, State Route 57/60 Feasibility Study; Diamond Bar, California; 2006 to Present. Assists in the development of concepts for improving the overlapping system interchange at State Route (SR)-57 and SR-60. Applying Context Sensitive Solutions (CSS) concepts to work with the stakeholders (cities, Metro, and Caltrans) to identify context, issues and opportunities, an evaluation approach, and potential solutions. Assisting the team developing conceptual alternatives, including collector-distributor roads, truck bypasses, grade separations, and high-occupancy vehicle (HOV) connectors. Supporting the traffic analysis, including forecasting and VISSIM modeling.

Transportation Engineer; 91 Express Lanes Extension and State Route 241 Connector Feasibility Study; Orange County, California; 2007 to Present. Assists in the development of concepts for improving the system interchange at SR-241 and SR-91. Supporting the team in developing conceptual alternatives, including HOV connectors, toll connectors, express lane extensions, and new alignments.

Transportation Engineer; I-5 Corridor Microsimulation Study; Caltrans District 7; California; 2007. Assists in the preparation of a microsimulation study of the Interstate (I)-5 freeway corridor from SR-91 to I-605. Preparation items include the examination of relative benefits of various project improvements including freeway widening, implementation of HOV lanes, and interchange modifications.

Traffic Analysts; Pier S Traffic Analysis; Port of Long Beach; California; 2007.

Prepared a traffic analysis report to identify the traffic impacts associated with the development of a marine container terminal. The analysis looked at existing and future conditions (accounting for truck traffic by various classifications) and identified the traffic changes associated with the proposed project, assessed the impacts, and made recommendations for improvements to mitigate the impacts.

Transportation Engineer; Riverside County Transportation Commission Mid-County Parkway; California; 2007. Assisted in the preparation of the Transportation Management Plan (TMP) for various alignments of the proposed Mid-County Parkway in the County of Riverside. Preparation items included preliminary cost estimate worksheets for the TMP and construction staging writeups.

Transportation Engineer; Improvements to I-5/Oso Parkway Interchange Project; Caltrans District 12/OCTA; California; 2007. Assisted in the preparation of the TMP for the proposed I-5/Oso Parkway Improvement project in Orange County. Preparation items included preliminary cost estimate worksheets for the TMP, construction staging writeups, and detour strategy development.

Transportation Engineer; State Route 79; Riverside County Transportation Commission; California; 2007. Prepared future traffic forecasts to help determine needed improvements along SR 79 in the County of Riverside.

Traffic Engineer; State Route 52; Managed Lanes Project; California; 2007. Provided preliminary cost estimate data for traffic items involved with managed lane project.

Transportation Engineer; Traffic Signal Design; Private Client; Murrieta, California; 2007. Prepared traffic signal design plans, signing and striping design plans, worksite traffic control design plans, and signal interconnect design plans for five surrounding intersections in connection with a major retail development.

EXHIBIT B-18
DECLARATION OF RONALD W. ROUSE

Declaration of
Ronald W. Rouse
Carlsbad Energy Center Project
(07-AFC-6)

I, Ronald W. Rouse, declare as follows:

1. I am an attorney, licensed to practice in all Courts in the State of California (SBN 058177), employed since 1973 by Luce, Forward, Hamilton & Scripps LLP and under contract with Carlsbad Energy Center LLC to provide land use, environmental and legal consulting services for the Carlsbad Energy Center Project ("CECP" or the "Project").
2. I caused to be prepared, or prepared information related to, **Land Use** in support of the Application for Certification for CECP. Such information was based on my independent analysis of data from reliable documents and sources and my 36 years of professional experience and knowledge. Specifically, I prepared, caused to be prepared, and/or have reviewed the following documents in support of the Project:
 - a. Application for Certification Land Use Section 5.6, (09/11/2007)
 - b. Application to City of Carlsbad for Amendment to the Precise Development/Specific Plans (09/19/2007)
 - c. Data Adequacy Supplement A (10/24/2007)
 - d. Data Responses to the City of Carlsbad, Set 1A, #51-54
 - e. Offsite Alternatives Analysis (04/17/2008)
 - f. Project Consistency with City of Carlsbad Land Use Ordinances (06/03/2008)
 - g. Project Enhancement and Refinement Section 5.6 (07/25/2008)
 - h. Correspondence to City of Carlsbad re City's Proposed Ordinance CS-067 (Moratorium) (10/27/2008)
3. It is my professional opinion that the information provided to the California Energy Commission related to the CECP AFC proceeding is valid and accurate with respect to the issues addressed therein.
4. I am personally familiar with the facts and conclusions related in the testimony presented by me and, if called as a witness, could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

12/11/09
Date

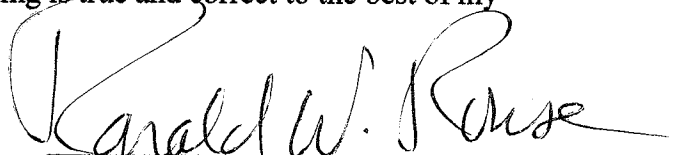

Ronald W. Rouse

EXHIBIT B-19
DECLARATION OF GARY RUBENSTEIN

Declaration of
Gary Rubenstein
Carlsbad Energy Center Project
(07-AFC-6)

I, Gary Rubenstein, declare as follows:

1. I am presently employed by Sierra Research, Inc. under contract with Carlsbad Energy Center LLC to provide environmental consulting services for the Carlsbad Energy Center Project ("CECP").
2. A copy of my professional qualifications and experience is attached hereto as Exhibit A and incorporated by reference herein.
3. I caused to be prepared or prepared information for **Air Quality and Public Health** in support of the Application for Certification ("AFC") for CECP. Such information was based on my independent analysis of data from reliable documents and sources and my professional experience and knowledge. Specifically, I prepared or caused to be prepared the following:
 - Submittal from CECP to CEC, 09/11/07, Application for Certification (AFC) Air Quality and Public Health Sections 5.1 and 5.9
 - Submittal from CECP to SDAPCD, 09/19/07, Application for Authority to Construct (ATC)
 - Submittal from CECP to CEC, 10/23/07, Data Adequacy Supplement A Air Quality Section 5.1
 - Submittal from CECP to CEC, 07/25/08, Project Enhancement and Refinement Air Quality and Public Health Sections 5.1 and 5.9
 - Correspondence from CECP to SDAPCD, 12/18/07, ATC supplemental information
 - Submittal from CECP to CEC, 12/20/07, Response to Staff Data Request Set 1A, Data Responses #1-27, 35
 - Submittal from CECP to CEC, 03/18/08, Response to Staff Data Request Set 2, Data Responses #76-91
 - Submittal from CECP to CEC, 06/05/08, Response to Staff Data Request Set 2A, Data Responses #84, 85, 87, 89, 90, 113-118
 - Submittal from CECP to CEC, 10/14/08, Response to Staff Data Request Set 3B, Data Responses #72-73
 - Submittal from CECP to CEC, 02/19/09, Response to Staff Data Request Set 4, Data Responses #142-158
 - Submittal from CECP to CEC, 01/26/09, Response to Center for Biological Diversity Data Request Set 1, Data Responses #A1-G1
 - Submittal from CECP to CEC, 02/06/08, Response to City of Carlsbad Data Request Set 1A, Data Responses #49-50
 - Submittal from CECP to CEC, 10/08/09, Response to Power of Vision (POV) Data Request
 - Correspondence from CECP to SDAPCD, 06/16/08, Monitoring Plan for Compliance Testing and CEMS Accuracy Audit

- Correspondence from CECP to SDAPCD, 06/30/08, Supplemental Air Quality Impact Modeling
- Correspondence from CECP to SDAPCD, 07/29/08, NOx Emission Reduction Credits (ERCs) Needed for Project
- Correspondence from CECP to SDAPCD, 08/25/08, Revised Emissions Baseline Calculation for Boilers 1-3
- Correspondence from CECP to SDAPCD, 09/04/08, Acid Rain Permit Application
- Correspondence from CECP to SDAPCD, 09/24/08, Supplemental Air Quality Modeling
- Correspondence from CECP to SDAPCD, 01/05/09, Comments on Preliminary Determination of Compliance (PDO)
- Correspondence from CECP to SDAPCD, 02/11/09, Revised Emissions Baseline Calculation for Boilers 1-3
- Correspondence from CECP to SDAPCD, 02/11/09, NOx Emission Reduction Credits (ERCs) Needed for Project
- Correspondence from CECP to SDAPCD, 02/26/09, Statewide Compliance Certification
- Correspondence from CECP to SDAPCD, 03/09/09, Statewide Compliance Certification
- Submittal from CECP to CEC, 03/13/09, Summary of Cumulative Air Quality Modeling Impacts
- Submittal from CECP to CEC, 04/16/09, 2007 and 2008 Fuel Use and NOx Emissions for Boilers 1-5
- Correspondence from CECP to SDAPCD, 04/29/09, Supplemental Health Risk Assessment
- Correspondence from CECP to SDAPCD, 05/01/09, VOC ERCs
- Correspondence from CECP to the Environmental Protection Agency (EPA), 06/05/09, Regarding Prevention of Significant Deterioration Non-Applicability
- Correspondence from CECP to SDAPCD, 06/16/09, Supplemental Information Regarding 2002-2006 Fuel Use for Boilers 1-3
- Correspondence from CECP to EPA, 08/24/09, 1997-2008 Baseline Emissions for Boilers 1-3
- Submittal from CECP to CEC, 04/17/09, Project Alternatives Analysis Air Quality and Public Health Sections 2.5.1 and 2.5.6
- Submittal from CECP to CEC, 11/20/08, Objection to CBD Data Request Section B Specific Objections A1, B1, C1, C2, D1
- Submittal from CECP to CEC, 01/30/09, Comments on PSA
- Submittal from CECP to CEC, 07/14/09, Objection to POV Data Request Exhibit C
- Submittal from CECP to CEC, 10/12/09, Objection to POV Data Request Section II.D
- Correspondence from CECP to EPA, 10/03/07, Acid Rain Designated Representative
- Submittal from CECP to Roe, 06/19/09, Objection to POV Data Request
- Correspondence from CECP to SDAPCD, 08/09/07, Air Quality Modeling Protocol
- Correspondence from CECP to SDAPCD, 04/17/08, Revised Emissions Baseline Calculation for Boilers 1-3

- Applicant's Testimony Regarding Final Staff Assessment Conditions of Certification for Air Quality
4. My testimony in this proceeding also includes the following document prepared by others:
 - Email dated 11/19/2009 from Steve Moore, SDAPCD, to Mike Monasmith, CEC, transmitting the "Air Pollution Control District, County of San Diego, Responses to Comments, Carlsbad Energy Center Project" as related to the District's Preliminary Determination of Compliance.
 5. It is my professional opinion that the information provided to the California Energy Commission related to the CECP AFC proceeding is valid and accurate with respect to the issues addressed herein.
 6. I am personally familiar with the facts and conclusions related in the testimony presented by me and, if called as a witness, could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

12/14/2009
Date

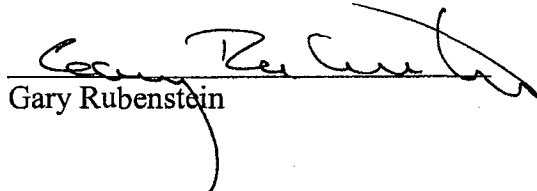

Gary Rubenstein

EXHIBIT A



**sierra
research**

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Résumé

Gary S. Rubenstein

Education

1973, B.S., Engineering, California Institute of Technology

Professional Experience

8/81 to present Senior Partner
Sierra Research

As one of the founding partners of Sierra Research, responsibilities include project management and technical and strategy analysis in all aspects of air quality planning and strategy development; project licensing and impact analysis; emission control system design and evaluation; rulemaking development and analysis; vehicle inspection and maintenance program design and analysis; and automotive emission control design, from the initial design of control systems to the development of methods to assess their performance in customer service. As the Partner principally responsible for Sierra Research's activities related to stationary sources, he has supervised the preparation of control technology assessments, environmental impact reports and permit applications for numerous industrial and other development projects, including over 17,000 megawatts of electrical generating capacity, throughout the United States.

While with Sierra, Mr. Rubenstein has managed and worked on numerous projects, including preparation of nonattainment plans; preparation and review of emission inventories and control strategies; preparation of the air quality portions of environmental review documents for controversial transportation, energy, mineral industry and landfill projects; preparation of screening health risk assessments and supporting analyses; and the development of air quality mitigation programs. Mr. Rubenstein has managed the preparation of air quality licensing applications for over 13,000 megawatts of generating capacity before the California Energy Commission, and has managed air quality analyses for over 21,000 megawatts of generating capacity in a variety of jurisdictions.

Mr. Rubenstein has presented testimony and served as a technical expert witness before numerous state and local regulatory agencies, including the U.S. Environmental Protection Agency, California State Legislative Committees, the California Air Resources Board, the California Energy Commission, the California Public Utilities Commission, numerous California air pollution control districts, the Connecticut Department of Environmental Protection, the Hawaii Department of Health, and the

Alabama Department of Environmental Management. Mr. Rubenstein has also served as a technical expert on behalf of the California Attorney General and Alaska Department of Law, and has provided expert witness testimony in a variety of administrative and judicial proceedings.

6/79 to 7/81

Deputy Executive Officer
California Air Resources Board

Responsibilities included policy management and oversight of the technical work of ARB divisions employing over 200 professional engineers and specialists; final review of technical reports and correspondence prepared by all ARB divisions prior to publication, covering such diverse areas as motor vehicle emission standards and test procedures, motor vehicle inspection and maintenance, and air pollution control techniques for sources such as oil refineries, power plants, gasoline service stations and dry cleaners; review of program budget and planning efforts of all technical divisions at ARB; policy-level negotiations with officials from other government agencies and private industry regarding technical, legal, and legislative issues before the Board; representing the California Air Resources Board in public meetings and hearings before the California State Legislature, the California Energy Commission, the California Public Utilities Commission, the Environmental Protection Agency, numerous local government agencies, and the news media on a broad range of technical and policy issues; and assisting in the supervision of over 500 full-time employees through the use of standard principles of personnel management and motivation, organization, and problem solving.

7/78 – 7/79

Chief, Energy Project Evaluation Branch
Stationary Source Control Division
California Air Resources Board

Responsibilities included supervision of ten professional engineers and specialists, including the use of personnel management and motivation techniques; preparation of a major overhaul of ARB's industrial source siting policy; conduct of negotiations with local officials and project proponents on requirements and conditions for siting such diverse projects as offshore oil production platforms, coal-fired power plants, marine terminal facilities, and almond-hull burning boilers.

During this period, Mr. Rubenstein was responsible for the successful negotiation of California's first air pollution permit agreements governing a liquefied natural gas terminal, coal-fired power plant, and several offshore oil production facilities.

10/73 to 7/78

Staff Engineer
Vehicle Emissions Control Division
California Air Resources Board

Responsibilities included design and execution of test programs to evaluate the deterioration of emissions on new and low-mileage vehicles; detailed analysis of the effect of California emission standards on model availability and fuel economy; analysis of proposed federal emission control regulations and California legislation; evaluation of the cost-effectiveness of vehicle emission control strategies; evaluation of vehicle inspection and maintenance programs, and preparation of associated legislation, regulations and budgets; and preparation of detailed legal and technical regulations regarding all aspects of motor vehicle pollution control. Further duties included preparation and presentation of testimony before the California Legislature and the U.S. Environmental Protection Agency; preparation of division and project budgets; and creation and supervision of the Special Projects Section, a small group of highly trained and motivated individuals responsible for policy proposals and support in both technical and administrative areas (May 1976 to July 1978).

Credentials and Memberships

Air & Waste Management Association (Chair, Board of Directors, Golden West Section; Member, Board of Directors, Mother Lode Chapter)

American Society of Mechanical Engineers

Qualified Environmental Professional, Institute of Professional Environmental Practice, 1994

Selected Publications (Author or Co-Author)

"Evaluation of CTM-039 Dilution Method for Measuring PM₁₀/PM_{2.5} Emissions from Gas-Fired Combustion Turbines," August 20, 2009.

"Dealing with the Scarcity of PM Offsets," presented to Law Seminars International: Air Quality Regulation in California on April 15, 2008, in Los Angeles, CA.

"Field Demonstration of a Dilution-Based Particulate Measurement System," presented to Stationary Source Sampling and Analysis for Air Pollutants on March 5, 2008, in San Diego, CA.

"The California Global Warming Solutions Act of 2006 – Implementation Considerations," presented to Law Seminars International: Energy in California 2007 on September 17, 2007, in San Francisco, CA.

“Preparing for and Conducting Air Quality Compliance Audits,” presentation to California Desert Air Working Group on October 19, 2006, in Big Bear Lake, CA.

“Test Results from Sugar Cane Bagasse and High Fiber Cane Co-fired with Fossil Fuels,” Biomass and Bioenergy, Vol. 30, Issue 6. pp. 565-574. June 2006.

“Gas Turbine Particulate Matter Emissions – Update,” Presentation to ASME/EIGTI Turbo Exp. on June 9, 2005 in Reno, NV.

“Gas Turbine Startup Emissions,” Presentation to ASME/IGTI Turbo Expo on June 9, 2005 in Reno, NV.

“Gas Turbine Particulate Matter Emissions – Update,” Presentation to ASME/IGTI Turbo Expo on June 18, 2003 in Atlanta, GA.

“Sources of Uncertainty When Measuring Particulate Matter Emissions from Natural Gas-Fired Combustion Turbines,” Presented to Air & Waste Management Association on March 30, 2001 in San Diego, CA.

“An Analysis of the Effect on Emissions of Allowing Drive-Thru Service Lanes,” Sierra Research Report No. SR97-11-01, prepared for California Business Properties Association, November 10, 1997.

“Searles Valley Air Quality Study (SVAQS) Final Report,” Sierra Research Report No. SR94-02-01, prepared for North American Chemical Company, February 1994.

“Regulatory Strategies for Reducing Emissions from Marine Vessels in California Waters,” Sierra Research Report No. SR91-10-01, prepared for the California Air Resources Board, October 4, 1991.

“An Analysis of the Effect on Emissions of Eliminating Drive-Thru Services Lanes,” Sierra Research Report No. SR91-07-03, prepared for California Restaurant Association, July 25, 1991.

“Development of the CALIMFAC California I/M Benefits Model,” Sierra Research Report No. SR-91-01-01, prepared for the California Air Resources Board, Agreement No. A6-173-64, January 1991.

“Criteria Pollutant Emission Inventory for the Coachella Valley Study Area,” Sierra Research Report No. SR90-11-01, prepared for South Coast Air Quality Management District, November 1990.

“User’s Guide to the CALIMFAC California I/M Benefits Model,” Prepared for the California Air Resources Board, May 1990.

“Potential Emissions and Air Quality Effects of Alternative Fuels – Final Report,” Sierra Research Report No. SR89-03-04, prepared for Western States Petroleum Association, March 28, 1989.

“Interprecursor Offset Ratios for Ozone in the Searles Valley,” Sierra Research Report No. SR89-03-02, prepared for Kerr-McGee Chemical Company, March 17, 1989.

“An Assessment of the Quality of California’s Air Pollution Emissions Inventory,” Sierra Research Report No. SR88-05-01, prepared for Western Oil and Gas Association, May 1988.

“Trends in Visibility-Related Emissions Affecting the R-2508 Restricted Airspace,” Sierra Research Report No. SR88-05-02, prepared for Western Oil and Gas Association, May 1988.

“Volume I, Executive Summary: Impacts of Air Quality Regulations on Visibility-Related Emissions in the California R-2508 Restricted Airspace,” Sierra Research Report No. SR88-03-02, prepared for Western Oil and Gas Association, March 1988.

“Volume II, Determination of California Air Basins Which Can Affect Visibility in the R-2508 Restricted Airspace,” Sierra Research Report No. SR88-03-03, prepared for Western Oil and Gas Association, March 1988.

“Air Quality Impact Analysis for the Soledad Biomass Resource Recovery Project,” Sierra Research Report No. SR87-10-01, prepared for Western Forest Power Corp., October 1987.

“Air Quality Impact Analysis for the Honey Lake Biomass Power Plant Project,” Sierra Research Report No. SR87-05-01, prepared for GeoProducts-Zurn/NEPCO, May 22, 1987.

“1986 Update to the Kern County Nonattainment Area Plan,” Sierra Research Report No. SR86-03-01, prepared for Kern County Air Pollution Control District and Kern Council of Governments, March 1986.

“An Analysis of Test Results on Grancor Pollution Control Devices for Automotive Retrofit Programs,” Sierra Research Report No. SR85-09-01, prepared for Grancor, September 1985.

“Temperature Correction Factors for California’s Motor Vehicle Emissions Model,” Sierra Research Report No. SR85-06-01, prepared for the California Air Resources Board, June 1985.

"Critique of the EPA I/M Benefits Model for 1980 and Older Model Cars," Sierra Research Report No. SR85-06-02, prepared for the California Air Resources Board, June 1985.

"Emission Factors for 1980 and Later Model Year California Passenger Cars and Light-Duty Trucks," Sierra Research Report No. SR85-06-03, prepared for the California Air Resources Board, June 1985.

"Technology Assessment for Light-Duty Vehicle Compliance with a 0.4g/m NOx Standard," Sierra Research Report No. SR85-06-04, prepared for the California Air Resources Board, June 1985.

"Development of California's I/M Credits Model," Sierra Research Report No. SR85-06-06, prepared for the California Air Resources Board, June 1985.

"A Comparison of Refueling Emissions Control with Onboard and Stage II Systems," SAE Technical Paper No. 851204, Society of Automotive Engineers, May 1985.

"Evaluation of Automotive CO Emissions Control Techniques at Low Temperatures (METFAC Report 2)," Sierra Research Report No. SR84-11-01, prepared for Alaska Department of Environmental Conservation, November 1984.

"Critical Metal Consumption in Automotive Catalysts – Trends and Alternatives," Sierra Research Report No. SR83-12-01, prepared for Congress of the United States, Office of Technology Assessment, December 1983.

"Low Temperature Automotive Emissions (METFAC, Report 2)," Sierra Research Report No. SR83-11-01, prepared for Alaska Department of Environmental Conservation, November 1983.

"Proposed Emission Cutpoints for the Anchorage Inspection and Maintenance Program," Sierra Research Report No. SR83-06-01, prepared for Municipality of Anchorage, Alaska, June 1983.

"A Study of Air Pollution Offsets for Cogeneration and Resource Recovery Technologies in Kern County – Interim Report: Project Inventory," Sierra Research Report No. SR82-01-01, prepared for Kern County Air Pollution Control District and Kern County Council of Governments, January 1983.

"Automotive Retrofit Devices for Improving Cold Weather Emissions and Fuel Economy," Sierra Research Report No. SR82-10-01, prepared for U.S. Army Cold Regions Research and Engineering Laboratory, October 1982.

"Carbon Monoxide Air Quality Trends in Fairbanks, Alaska," Sierra Research Report No. SR82-09-01, prepared for Fairbanks North Star Borough, September 1982.

“Cogeneration and Resource Recovery in Kern County – Final Report,” Sierra Research Report No. SR82-06-01, prepared for Kern County Air Pollution Control District and Kern County Council of Governments, June 1982.

“Cold Weather CO Problems – An Analysis of Research Needs,” Sierra Research Report No. SR82-04-01, prepared for Alaska Department of Environmental Conservation, April 1982.

“The Potential for the Use of Catalytic NO_x Controls on Stationary Sources in California,” Sierra Research Report No. SR82-02-01, February 1982.

“Staff Report - Cogeneration Technology and Resource Recovery Status Report,” California Air Resources Board, November 1981.

“The Effect of Clean Air Act Amendments on High Altitude Passenger Cars,” Sierra Research Report No. SR81-09-01, September 1981.

“Staff Report - Public Meeting to Discuss Proposed Guidelines for the Control of Emissions from Coal-Fired Power Plants (81-11-2),” California Air Resources Board, June 1981.

“Staff Report - Public Hearing to Consider Amendments to Title 13, Section 1960.1, CAC, Regarding Exhaust Emission Standards and Test Procedures for 1983 and Subsequent Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles,” California Air Resources Board, May 1981.

“Staff Report - Suggested Control Measure for the Control of Hydrogen Sulfide Emissions from Geothermal Operations at the Geysers Known Geothermal Resources Area (81-6-1),” California Air Resources Board, April 1981.

“Staff Report - Proposed Methodology for Calculating a NO_x Amelioration Factor for Light-Duty Diesel Vehicles,” California Air Resources Board, April 1981.

“Staff Report - A Proposed Air Resources Board Policy Regarding Incineration as an Acceptable Technology for PCB Disposal,” California Air Resources Board, March 1981.

“Staff Report - Public Meeting to Discuss a Proposed Air Resources Board Policy Regarding Incineration as an Acceptable Technology for PCB Disposal,” California Air Resources Board, March 1981.

“Staff Report - Suggested Control Measure for the Control of Oxides of Nitrogen Emissions from Electric Utility Gas Turbines (81-4-2),” California Air Resources Board, March 1981.

“Staff Report - Public Hearing to Consider Amendments to Title 13, Section 1956.7, CAC, Regarding Exhaust Emission Standards and Test Procedures for 1984 and Subsequent Model Heavy Duty Engines (81-1-1),” California Air Resources Board, January 1981.

“Gasohol: Technical, Economic or Political Panacea?” SAE Paper No. 800891, 1980.

“Staff Reports Related to Public Hearing to Consider Amendments to Rule 475.1 of the South Coast Air Quality Management District and to Rule 59.1 of the Ventura County Air Pollution Control District, Which Control the Emissions of Oxides of Nitrogen from Power Plants,” California Air Resources Board, January 1980; March 1980; November 1980; December 1980.

“Staff Report - Public Hearing to Consider Confirmation of Emergency Adoption of Section 1960.4, Title 13, CAC, Regarding Special NO_x Standards for Small-Volume Manufacturers (80-25-1),” California Air Resources Board, December 1980.

“Staff Report - Public Hearing to Consider Adoption of California Assembly- Line Test Procedures for Certain 1982 Model Year Vehicles and Adoption of Section 2060, Title 13, CAC, Incorporating the Test Procedures (80-26-4),” California Air Resources Board, December 1980.

“Staff Report - Public Hearing to Consider Repeal of 1955-1965 Model Year Motor Vehicle Exhaust Retrofit Emission Control Requirements - Title 13, CAC Section 2007 (80-20-2),” California Air Resources Board, October 1980.

“Staff Report - Public Hearing to Consider Amendments to Rule 424 of the Kern County APCD Controlling Emissions of Sulfur Oxide from Steam Generators Used in Oil Field Operations,” California Air Resources Board, October 1980.

“Staff Report - Proposed Amendments to Title 13, CAC, Sections 2035-42, Regarding Warranty of Emissions-Related Components of Vehicles (80-18-1),” California Air Resources Board, September 1980.

“Staff Report - Proposed Amendment to Title 13, CAC Regarding Standards and Test Procedures for Modified Vehicles - 1981 and Subsequent Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles,” California Air Resources Board, September 1980.

“Staff Report - Public Meeting to Discuss Issues Related to Power Plant Siting,” California Air Resources Board, September 1980.

“Staff Report - Emergency Public Hearing to Consider Amendments to Title 13, CAC, Regarding Exhaust Emission Standards for Oxides of Nitrogen (NO_x) from Vehicles Produced by Small Manufacturers for the 1982-1986 Model Years of Passenger Cars, Light-Duty Trucks and Medium- Duty Vehicles,” California Air Resources Board, August 1980.

“Staff Report - Emergency Public Hearing to Consider Adoption of a Particulate Exhaust Emission Standard for 1982 and Subsequent Model Year Light-Duty Diesel Vehicles and to Consider Amending the 1982 NOx Exhaust Emission Standard for Those Vehicles (80-15-2),” California Air Resources Board,” August 1980.

“Cogeneration Technology and Resource Recovery Status Report,” California Air Resources Board, August 1980.

“Staff Report - Response to the Motorcycle Manufacturers’ Petition Requesting the Board Reevaluate the 1.0 Gram Per Kilometer Exhaust Emission Standard for 1982 and Subsequent Model Year Motorcycles (80-13-3),” California Air Resources Board, July 1980.

“Staff Report - Inventory of Potential Cogeneration Technology and Resource Recovery Projects Planned or Proposed to Be Constructed Before 1987,” California Air Resources Board, July 1980.

“Staff Report - Public Hearing to Consider Proposed Amendments to Kern County APCD Rule 424 - Sulfur Compounds from Oil Field Steam Generators,” California Air Resources Board, May 1980.

“Staff Report - Public Hearing to Consider Amending the Rules and Regulations of Imperial County Air Pollution Control District, Los Angeles County Air Pollution Control District and San Bernardino County Air Pollution Control District,” California Air Resources Board, May 1980.

“Staff Report - Public Hearing to Consider Amendments to Title 13, CAC, Regarding the Extension of California's 1980 Heavy-Duty Engine Emission Standards through the 1983 Model Year,” California Air Resources Board, May 1980.

“Staff Report - Public Hearing to Consider Amendments to the Rules and Regulations of the Kern County APCD Amendments to Rule 210.1, Standard for Authority to Construct, and Addition of Rule 425, Relating to Retrofit Control for Emissions of Oxides of Nitrogen from Oil Fired Steam Generators,” California Air Resources Board, March 1980.

“Staff Report - Public Hearing to Consider Proposed Amendments to Title 13 of the Administrative Code and to the Exhaust and Evaporative Emission Standards and Test Procedures for 1981 and Subsequent Model year Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles,” California Air Resources Board, March 1980.

“Air Pollution Aspects of Resource Recovery Facilities,” California Air Resources Board, March 1980.

"Memorandum of Agreement - Hondo 'A' Development Santa Ynez Unit, Santa Barbara Channel between The State of California, County of Santa Barbara and Santa Barbara Air Pollution Control District and Exxon Company, U.S.A.," California Air Resources Board, February 1980.

"A Report on California's Certificate of Compliance Program prepared for the California Legislature Joint Legislative Budget Committee in accordance with the requirements of the Supplemental Report on Item 194 of the Committee of Conference on the Budget," California Air Resources Board, December 1979.

"Status Report on the Need for/and Feasibility of a 0.4 NOx Standard for Light Duty Motor Vehicles," California Air Resources Board, December 1979.

"Staff Report - Status of NOx Control for Steam Generators and Availability of NOx Trade-offs in Kern County (79-27-1b)," California Air Resources Board, November 1979.

"Staff Report - Public Meeting to Consider Model Rule for the Control of Oxides of Nitrogen Emissions from Stationary Internal Combustion Engines (79-28-2)," California Air Resources Board, November 1979.

"First Annual Report to the Legislature on the Mandatory Vehicle Inspection Program (MVIP)," California Air Resources Board, October 1979.

"Chapter 27, California Lead Control Strategy - Revision to the State of California Implementation Plan for the Attainment and Maintenance of Ambient Air Quality Standards," California Air Resources Board, September 1979.

"Staff Report - Public Hearing to Reconsider the Adoption by the Board into the Regulations of the Kern County Air Pollution Control District on March 23, 1979, of Rule 424, for the Control for Emissions of Sulfur Compounds from Steam Generators Used in Oil Field Operations," California Air Resources Board, August - September 1979.

"Staff Report - Public Hearing to Consider the Adoption of Chapter 27 as a Revision to the State of California Implementation Plan for the Attainment and Maintenance of the National Ambient Air Quality Standards for Lead," California Air Resources Board, August 1979.

"Staff Report - Public Hearing to Consider Amendment of the State Regulation Which Limits the Lead Content of Gasoline Sold in California (79-22-1)," California Air Resources Board, August 1979.

"Staff Report - Alcohols and Alcohol/Gasoline Blends as Motor Fuels," California Air Resources Board, August 1979.

“Centralized Vehicle Inspection/Maintenance in California,” California Air Resources Board, May 1979.

“Staff Report - Public Hearing to Consider Changes to the Air Resources Board’s Standards and Test Procedures for 1980 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles,” California Air Resources Board, April 1979.

“Staff Report - Public Hearing to Consider Proposed Changes in the Regulations of the Air Resources Board Regarding Predelivery Inspection and Compliance Test Evaluation,” California Air Resources Board, April 1979.

“An Evaluation of California’s Private Garage Emissions Inspection Program,” California Air Resources Board, March 1979.

“Staff Report - Proposed Rule For Control of Emissions of Sulfur Compounds From Steam Generators and Boilers Used in Oilfield Operations in the Kern County Air Pollution Control District,” California Air Resources Board, March 1979.

“Staff Report - Public Hearing to Consider Adoption of a Regulation Controlling Emissions of Sulfur Compounds from Steam Generators Used in Oilfield Operations in the Kern County APCD,” California Air Resources Board, March 1979.

“Staff Report - Revisions to the State of California Implementation Plan (SIP) for the Attainment and Maintenance of National Ambient Air Quality Standards - Kings County, Madera County, Merced County, and Tulare County Non-attainment Plans (NAPs),” California Air Resources Board, February 1979.

“Staff Report - Public Meeting to Consider a Proposed Model New Source Review Rule,” California Air Resources Board, January 1979.

“Staff Report - Proposed ARB-CEC Joint Policy Statement of Compliance with Air Quality Laws by New Power Plants (79-1-3),” California Air Resources Board, January 1979.

“Staff Report - Public Hearing to Consider Exhaust Standards for the Mandatory Vehicle Inspection Program,” California Air Resources Board, September 1978.

“Staff Report - Public Hearing to Consider Proposed Emissions Warranty Regulations (78-3-1),” California Air Resources Board, February 1978.

“Staff Report - Public Hearing to Consider Proposed Highway Cycle Emission Standard for Passenger Cars, Light Duty Trucks, and Medium- Duty Vehicles (78-1-2),” California Air Resources Board, January 1978.

"Staff Report - Public Hearing to Consider Proposed Changes to Motor Vehicle Emission Standards Test Procedures, and Enforcement Programs (77-20-2)," California Air Resources Board, September 1977.

"Staff Report - Surveillance Bibliography of Passenger Cars, Motorcycles, Heavy-Duty and Medium-Duty Vehicles," California Air Resources Board, July 1977.

"Staff Report - Public Hearing on Proposed Changes to Regulations Regarding California Exhaust Emission Standards and Test Procedures for 1980 and Subsequent Model Motor Vehicles (78-9-2)," California Air Resources Board, May 1977.

"Staff Report - Public Hearing on Proposed Changes to Regulations Regarding Allowable Maintenance During New Vehicle Certification of Light-Duty and Medium-Duty Vehicles (77-12-1)," California Air Resources Board, May 1977.

"Staff Report - Public Hearing on Proposed Changes to Regulations Regarding Allowable Maintenance During New Vehicle Certification of Light-Duty and Medium-Duty Vehicles (77-9-2)," California Air Resources Board, April 1977.

"Staff Report - Manganese Fuel Additive MMT (77-9-3)," California Air Resources Board, April 1977.

"Staff Report - Public Hearing to Consider Amendments to the Hydrocarbon Standards and Test Procedures Applicable to 1978 Through 1981 Production Year Motorcycles (77-6-2)," California Air Resources Board, March 1977.

"Staff Report - Status Report on the Mandatory Vehicle Inspection Program (MVIP) (77-4-2)," California Air Resources Board, February 1977.

"Staff Report - Control of Motorcycle Evaporative Emissions and Certification of Motorcycle Fuel Fill Pipes (77-63)," California Air Resources Board, March 1977.

"Staff Report - Public Hearing on Proposed Changes to Regulations Regarding Vehicle Evaporative Emission Standards for 1980 and Subsequent Model Motor Vehicles (76-22-2 c)," California Air Resources Board, November 1976.

"Staff Report - Public Hearing on Proposed Changes to Regulations Regarding Exhaust Emission Standards and Test Procedures for 1979 and Subsequent Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles (76-22-2 a)," California Air Resources Board, November 1976.

"Staff Report - Public Hearing on Proposed Changes to Regulations Regarding Allowable Maintenance During New Vehicle Certification of Light-Duty and Medium-Duty vehicles (76-22-2 b)," California Air Resources Board, November 1976.

"Staff Report - Evaluation of Mandatory Vehicle Inspection and Maintenance Programs," California Air Resources Board, May-August 1976.

"Staff Report - Public Hearing to Consider Proposed Changes to Regulations Regarding Approval of 1978 and Subsequent Model Light-Duty Trucks and Heavy-Duty Engines (76-6-2)," California Air Resources Board, March 1976.

"Staff Report - Public Hearing to Consider Amendments to California Fuel Evaporative Emissions Test Procedures for 1978 and Subsequent Model Gasoline-Powered Vehicles (76-6-3)," California Air Resources Board, March 1976.

"Staff Report - Public Hearing Regarding Amendment of Emission Standards and Test Procedures for Motorcycles (76-1-4)," California Air Resources Board, January 1976.

"Staff Report - Catalyst Service and Replacement Regulations (75-20-2)," California Air Resources Board, October 1975.

"Staff Report - Emergency Action to Amend the New Vehicle Approval Regulations Regarding Catalyst Change (75-18-2)," California Air Resources Board, September 1975.

"Staff Report - Progress Report on Technology to Control Sulfate Emissions from Catalyst-Equipped Vehicles (75-15-2)," California Air Resources Board, August 1975.

"Staff Report - Public Hearing to Consider 1978 Production Motorcycle Emission Standards (75-14-2)," California Air Resources Board, July 1975.

"Staff Report - Consideration of Regulation Change to Extend the Alternate Heavy-Duty Engine Standards for 1977 and Subsequent Years (75-14-3)," California Air Resources Board, July 1975.

"Staff Report - Motorcycle Emission Control Strategies (75-11-4)," California Air Resources Board, June 1975.

"Staff Report - Catalytic Converter Retrofit Program - Used Vehicles Retrofitted with Universal Oil Products Catalytic Converters Final Report," California Air Resources Board, May 1975.

"Staff Report - Estimate of Contribution of Motorcycles to California Air Pollution (75-9-5)," California Air Resources Board, May 1975.

"Staff Report - Public Hearing for Adoption of Proposed Changes to Vehicular Enforcement Regulations Including Recall Procedures (75-9-4)," California Air Resources Board, May 1975.

"Staff Report - Public Hearing to Consider Inspection Specification Regulations in Title 13 -- New Vehicles (continued) (75-9-3a)," California Air Resources Board, May 1975.

“Staff Report - Emergency Action to Delete High Altitude Test Provisions from the 1975 and Subsequent New Vehicle Approval Procedures (75-7-7),” California Air Resources Board, April 1975.

“Staff Report - Public Hearing to Consider Fuel Evaporative Emission Regulations for Light-Duty Vehicles (75-7-6),” California Air Resources Board, April 1975.

“Staff Report - Reconsideration of Exhaust Emission Standards for 1977 and Subsequent Model-Year Heavy-Duty Engines (75-7-2),” California Air Resources Board, April 1975.

“Staff Report - Exhaust Emission Standards for 1977 Model-Year Light-Duty Vehicles (75-5-2),” California Air Resources Board, March 1975.

“Smog: A Report to the People,” Caltech Environmental Quality Lab, 1972.

EXHIBIT B-20
DECLARATION OF JENNIFER SCHOLL

Declaration of
JENNIFER SCHOLL
Carlsbad Energy Center Project
(07-AFC-6)

I, JENNIFER SCHOLL, declare as follows:

1. I am presently employed by CH2M HILL as a Senior Project Manager/Regulatory Specialist under contract with Carlsbad Energy Center LLC to provide environmental consulting services for the Carlsbad Energy Center Project ("CECP").
2. A copy of my professional qualifications and experience is attached hereto as Exhibit A and incorporated by reference herein.
3. I caused to be prepared or prepared information for **Alternatives** in support of the Application for Certification ("AFC") for CECP. Such information was based on my independent analysis of data from reliable documents and sources and my professional experience and knowledge. Specifically, I prepared or caused to be prepared the following:
 - a. AFC Alternatives Section 6
 - b. Offsite Alternatives Analysis, dated April 2008
 - c. Project Enhancement and Refinement Section 1.1.4
4. It is my professional opinion that the information provided to the California Energy Commission related to the CECP AFC proceeding is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony presented by me and, if called as a witness, could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

12-11-09

Date

Jennifer L. Scholl

JENNIFER SCHOLL

EXHIBIT A

Jennifer Scholl, Senior Regulatory Specialist

Land Use, Agricultural Resources and Alternatives Task Leader

Education

B.A. Environmental Studies and Political Science International Relations

Distinguishing Qualifications

- Regulatory Specialist for the interpretation and applicability of state, federal, and local plans and policies
- NEPA/CEQA compliance
- Project management
- Industrial facility siting studies
- Environmental planning and permitting
- Permit compliance management
- Land use planning/Regulatory policy consistency
- Socioeconomic evaluation
- Public participation and community involvement

Relevant Experience

Ms. Scholl has more than 23 years of experience in environmental planning and permitting of complex and controversial development projects. Specifically, Ms. Scholl has been involved with the permitting and construction compliance for power generation projects and ancillary facilities (i.e., transmission, gas, water, and sewer lines) and offshore oil and gas facilities with onshore processing and storage components in California. In addition to serving in a management capacity, Ms. Scholl's specific emphasis on these projects has been to conduct the land use and policy consistency analyses, prepare comprehensive assessments of project alternatives, including alternative sites, configurations, size, and technology, and to manage the regulatory permitting processes.

Since 1998, Ms. Scholl has dedicated her career to supporting numerous California Energy Commission (CEC) Jurisdictional Projects in various management roles including: Carlsbad Energy Center Project, Ivanpah Solar Energy Generating Station, GWF Tracy Power Plant, Eastshore Energy Center, South Bay Replacement Project, City of Vernon Power Plant, GWF Hanford, Henrietta, and Tracy Combined-Cycle Power Plants, Los Medanos Energy Center; Roseville Energy Center; Redondo Beach Generating Station, South City Generating Project, Long Beach District Energy Facility, and Otay Mesa Energy Center.

Ms. Scholl also has extensive experience managing environmental review projects for local agencies throughout California. She has provided permitting and environmental review support for the following types of projects: power generation (natural gas, wind, solar, and geothermal), transmission lines, petroleum pipelines, resort, complex habitat management/conservation programs, residential, and roadways. She also has extensive experience in leading Public Participation Programs. Prior to her work in private consulting, Ms. Scholl managed the permitting and environmental review of major oil and gas development projects, resort and residential developments, and oversaw the implementation of mitigation monitoring plans for the Santa Barbara County Planning and Development Department.

Representative Projects

Land Use Task Leader, NRG Carlsbad Energy Center, City of Carlsbad, San Diego County, California. Land Use Task Leader for preparation of the Land Use and Agricultural Resources and Alternatives analyses for an Application for Certification (AFC) to the CEC for a combined-cycle project within the existing Cabrillo Energy Center power station. Responsible for evaluating land use compatibility related to jurisdictional issues associated with the City of Carlsbad, California Coastal Commission, and the CEC and conducting an extensive alternatives analysis. AFC submitted to the CEC in September 2007 and currently going through CEC AFC processing.

Land Use Task Leader, GWF Energy Tracy Combined Cycle Conversion Project, San Joaquin County, California. Land Use Task Leader for preparation of the Land Use and Agricultural Resources Section of an AFC to the CEC for the conversion of an existing peaking plant to a combined-cycle baseload facility consisting of two natural-gas-fired turbines, fired heat recovery steam generators, steam turbine generator, and associated equipment. AFC approval expected in early 2010.

Land Use Task Leader, Ivanpah Solar Electric Generating System, Eastern San Bernardino County, California. Land Use Task Leader for preparation of the Land Use Section of an AFC to the CEC for a 400 MW solar energy power generation facility using heliostat fields to focus solar energy on power tower receivers. Responsible for evaluating land use and recreational use compatibility related to jurisdictional issues associated with the San Bernardino County, Bureau of Land Management (BLM), Federal Aviation Administration, and the CEC. AFC submitted to the CEC in September 2007 and currently going through CEC AFC processing.

Project Manager, City of Vernon Renewable Energy Project and Red Rock Wind Project, Northeastern Kern County, California. Project Manager for the siting and licensing of solar and wind energy generation on 54,000 acres of land controlled by the City of Vernon located north of the City of Tehachapi. Responsible for coordinating with Kern County, BLM, U.S. Fish and Wildlife Service, California Department of Fish and Game, and the Department of Defense. Also responsible for implementation of the data collection and biological and cultural resources survey programs to comply with state and federal regulations to support Kern County preparation of an Environmental Impact Report (EIR.) Kern County EIR expected to be released in June 2010.

Project Manager, GWF Hanford and Henrietta Petition for License Amendments, Central California. Project Manager for preparation and processing of Petitions for CEC License Amendments to convert two existing peaker projects to combined-cycle projects. GWF Hanford is located in Hanford and GWF Henrietta is located in Lemoore. The CEC is scheduled to approve both Amendments in January 2010.

Land Use Task Leader, South Bay Replacement Project, City of Chula Vista, San Diego County, California. Land Use Task Leader for preparation of the Land Use Section of an AFC to the CEC for a 500 MW combined-cycle replacement project for the existing South Bay Power Plant. Responsible for evaluating the land use compatibility issues related to jurisdictional issues associated with the City of Chula Vista, California Coastal Commission, CEC, and the Unified Port of San Diego. AFC submitted to the CEC in June 2006 and currently going through CEC AFC processing.

Assistant Project Manager, Eastshore Energy Center, City of Hayward, Alameda County, California. Assistant Project Manager for preparation of an Application for Certification (AFC) (CEQA EIR equivalent) to the California Energy Commission (CEC) for a 115 MW peaker power plant in the City of Hayward. Responsible for assisting the Project Manager with day-to-day coordination with the client, CEC, and City of Hayward staff for addressing agency requirements. AFC submitted to the CEC in September 2006 and is going through AFC processing and expected to be approved and in commercial operation in 2009.

Project Manager, Lompoc Wind Energy Project Environmental Impact Report (EIR), Lompoc, Santa Barbara County, California. Project Manager for preparation of an EIR, under contract to the County of Santa Barbara, for the development of a 120 MW wind energy electrical generation project on private ranch land in the Lompoc Valley. Public Draft released in July 2007, commercial operation expected in 2008.

Project Manager, Pastoria Energy Facility 160 MW Expansion Project, Calpine Corporation, Kern County. Project Manager for preparation of an AFC to the CEC for a 160 MW simple cycle addition to the existing Pastoria Energy Facility in southern Kern County. Responsible for day-to-day coordination with the client and CEC staff for addressing agency requirements. AFC submitted to the CEC in April 2005, received a license from the CEC in December 2006, and is expected to be and in commercial operation in 2008.

Regulatory Advisor/Siting Study Manager, Additional Support to Electricity Generation Proposals, Numerous Confidential Clients, California. Currently supports numerous electrical power generation proposals for natural gas-fired and renewable energy projects for multiple clients. Responsibilities include supporting clients with siting and issue screening, project development, agency coordination, land use permit reconnaissance and strategy for developments located in: Northern Los Angeles County, Kern County, Antelope Valley, South San Francisco, San Jose, Arcata, Los Banos, Fresno, and several other sites throughout California.

EXHIBIT B-21

DECLARATION OF W. GEOFFREY SPAULDING, PH.D.

Declaration of
W. Geoffrey Spaulding, Ph.D.
Carlsbad Energy Center Project
(07-AFC-6)

I, Geoffrey Spaulding, declare as follows:

1. I am presently employed by CH2M HILL under contract with Carlsbad Energy Center LLC to provide environmental consulting services for the Carlsbad Energy Center Project ("CECP").
2. A copy of my professional qualifications and experience is attached hereto as Exhibit A and incorporated by reference herein.
3. I prepared information for **Paleontological Resources** in support of the Application for Certification ("AFC") for CECP. Such information was based on my independent analysis of data from reliable documents and sources and my professional experience and knowledge. Specifically, I prepared or caused to be prepared the following:
 - a. AFC Paleontological Resources Section 5.8;
 - b. Project Enhancement and Refinement Section 5.8;
 - c. Confidential Paleontological Resources Appendix
4. It is my professional opinion that the information provided to the California Energy Commission related to the CECP AFC proceeding is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony presented by me and, if called as a witness, could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

12/09/2009
Date

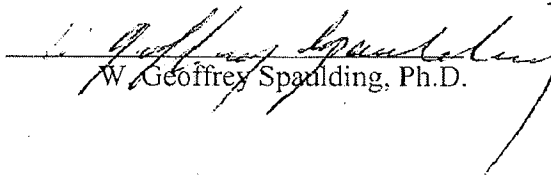

W. Geoffrey Spaulding, Ph.D.

EXHIBIT A

W. Geoffrey Spaulding, Ph.D.

Paleontological Resources Task Lead

Education

Ph.D., Geology (Paleobiology)
M. S., Geology (Palynology & Vertebrate Paleobiology)
B. A., Anthropology

Certifications

- California State Bureau of Land Management Paleontological Resources Use Permit CA-07-17
- Approved Paleontological Resources Specialist by the California Energy Commission, State of California
- Qualifications as Paleontological Resources Expert Witness accepted by the Attorney General of the State of Washington

Distinguishing Qualifications

- Specialist Paleontological Resources Management
- Expert in Paleoecology of Western North America
- Specialist in Site Formation Processes, Quaternary Paleobiology, Geoarchaeology, Paleohydrology
- Captain, Signal Corps, U. S. Army Reserve (Retired)

Relevant Experience

Dr. Spaulding is a senior scientist and paleontologist with CH2M HILL with extensive experience in paleobiology, paleontology, and paleoecology. He also is accomplished in the study of site formation processes, and the Quaternary geology of the western United States. He has more than three decades of technical experience in the Earth and Life sciences focusing on the deserts of western North America and on California. Prior to joining private industry, he was on the faculty of the University of Washington, Seattle specializing in paleobiology and paleoecology.

Representative Projects

Carlsbad Energy Center Project. Performed the paleontological resources literature review and records search, conducted the field reconnaissance, and prepared the AFC Paleontological Resources section for the construction of a combined-cycle facility consisting of two natural-gas-fired turbines, heat recovery steam generators, steam turbine generators, and associated equipment.

GWF Energy Tracy Combined Cycle Conversion Project, San Joaquin County, California. Performed the paleontological resources literature review and records search, conducted the field reconnaissance, and prepared the AFC Paleontological Resources section for the

conversion of an existing peaking plant to a combined-cycle baseload facility consisting of two natural-gas-fired turbines, fired heat recovery steam generators, steam turbine generator, and associated equipment.

GWF Energy Hanford and Henrietta Combined Cycle Conversion Projects. Performed the paleontological resources literature review and records search, conducted the field reconnaissance, and prepared the AFC Paleontological Resources section for the conversion of two existing peaking plants to combined-cycle baseload facilities. The combined cycle facilities included two natural-gas-fired turbines, fired heat recovery steam generators, steam turbine generator, and associated equipment.

Ivanpah Solar Electric Generating System EIS/AFC. Conduct records review and literature search, field reconnaissance and subsequent field survey of paleontologically sensitive areas, and recordation of Paleozoic and Quaternary paleontological sites in support of a large solar powered electrical generation facility. Model pluvial lake fluctuations and alluvial fan surface development to determine distribution of paleontologically and archaeologically sensitive sediments. Prepare appropriate paleontological resources sections for BLM EIS and California Energy Commission Application for Certification. Address site formation process in subsequent data request phase.

Power Plant Licensing and Permitting Program, Calpine Corporation. Paleontological Resources Specialist for several AFCs before the CEC for Calpine's Delta Energy Center in Contra Costa County, and Los Medanos Energy Facility in Santa Clara County as well as AFCs for three peaking power plants licensed under the CEC's emergency AB970 licensing process. Prepared Data Request Responses, attending workshops and providing expert testimony before the licensing hearings. Also prepared preconstruction monitoring plans and provided construction monitoring and compliance services.

AES Highgrove Power Project. Prepared the air quality permits and AFC for 300-megawatt peaking facility consisting of three natural-gas-fired turbines and associated equipment. The project will employ General Electric's LMS100 combustion turbine generators that integrate new technology to increase the combustion turbine's efficiency above existing turbine technologies.

City of Vernon Power Project. Performed the paleontological resources literature review and records search, conducted the field reconnaissance, and prepared the AFC Paleontological Resources section for 914-megawatt baseload facility consisting of three natural-gas-fired turbines and associated equipment.

Paleontological Resources Specialist, Construction-Phase Mitigation Implementation, Multiple Power Generation Projects, California. Develop and manage paleontological resources monitoring and mitigation programs for the construction of power generation projects including the Walnut Energy Center south of Modesto, the Roseville Energy Park east of Sacramento, and the Gateway Generation Station near Antioch. Prepare the Paleontological Resources Module of the worker education program and visual aids for worker education. Direct the recovery of discovered paleontological resources (Quaternary vertebrate and paleobotanical remains), and consult with client representatives and the California Energy Commission on the adequacy of mitigation efforts. Develop site-specific stratigraphic framework to identify paleontologically sensitive sediments, and to provide

client and the CEC with guidance regarding what construction activities need and need not be monitored.

EXHIBIT B-22
DECLARATION OF JOHN STEINBECK

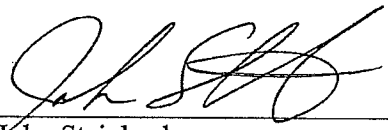
Declaration of
John Steinbeck
Carlsbad Energy Center Project
(07-AFC-6)

I, John Steinbeck, declare as follows:

1. I am presently employed by Tenera Environmental Inc. under contract with Carlsbad Energy Center LLC to provide environmental consulting services for the Carlsbad Energy Center Project ("CECP").
2. A copy of my professional qualifications and experience is attached hereto as Exhibit A and incorporated by reference herein.
3. I caused to be prepared or prepared information for **Biological Resources** in support of the Application for Certification ("AFC") for CECP. Such information was based on my independent analysis of data from reliable documents and sources and my professional experience and knowledge. Specifically, I prepared or caused to be prepared the:
 - a. Project Enhancement and Refinement Document Section 5.2; and
 - b. Appendices 5.2C, 5.2D, 5.2E in the Project Enhancement and Refinement Document
4. It is my professional opinion that the information provided to the California Energy Commission related to the CECP AFC proceeding is valid and accurate with respect to the issues addressed herein.
5. I am personally familiar with the facts and conclusions related in the testimony presented by me and, if called as a witness, could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

11/30/2009
Date



John Steinbeck

EXHIBIT A

John Steinbeck

Vice President / Director

Education

M.S. Biological Sciences, California Polytechnic State University, San Luis Obispo, California, 1986

B.S. Biological Sciences, California Polytechnic State University, San Luis Obispo, California, 1980

Continuing Education

Data Analysis in R, 2007

Multivariate Community Analysis using PRIMER, 2002

Analysis of Messy Data, Professional Education, Inc., 1996

Scientific Writing, California Polytechnic State University, Extension, 1994

Environmental Regulatory Compliance, University of California Extension, 1992

Experience

Mr. Steinbeck is the Vice President of Tenera Environmental and has over 25 years of experience as a professional environmental scientist. He is responsible for the management of the Tenera Environmental San Luis Obispo office and is the Principal Investigator for marine environmental studies conducted at the Diablo Canyon Power Plant by Tenera under contract to Pacific Gas and Electric Company. This program is one of the largest and most extensive environmental monitoring programs conducted in the United States. He has also worked on almost all of the environmental studies on the effects of power plant cooling water intake systems conducted in California since 1995. On these projects he was primarily responsible for project management, study design, and the design and analysis of the fishery based models used in the assessment of results. This same experience was utilized in several projects on the effects of intakes for ocean desalination plants, many of which have proposed for siting at power plants that have been the subject of Tenera studies. He is recognized expert in the design and statistical analysis of environmental impact studies and has been the principal or contributing author on several papers published in scientific journals including a recent paper in *Ecological Applications* on statistical techniques used for impact assessment. He is also the principal author on a report for the California Energy Commission that describes aspects of the design and modeling of environmental effects of entrainment by power plant cooling water systems. As a result of this experience he was appointed to a panel of experts providing input to the State of California on policy development for power plant once-through cooling.

1982 – Present *Vice President/Principal Scientist, Tenera Environmental, LLC, San Luis Obispo, California*

- ❖ **Project Manager for 316(b) Impingement Mortality and Entrainment Studies**
Kahe, Waiau, and Honolulu Generating Stations, Hawaiian Electric Co.
Encina Power Station, Carlsbad, California
Huntington Beach Generating Station, Huntington Beach, California
Haynes Generating Station, Long Beach, California
Alamitos Generating Station, Long Beach, California
Harbor Generating Station, Los Angeles, California
Redondo Beach Generating Station, Redondo Beach, California
El Segundo Generating Station, El Segundo, California
Scattergood Generating Station, El Segundo, California

Mr. Steinbeck was principally responsible for the design of the impingement mortality and entrainment studies at these power plants conducted over the period from 2003 through 2007. This included preparing report and presentations for resource agency review, and negotiations with these agencies and other stakeholders on the final design of the studies. He also was responsible for the management of the entrainment and source water sampling for these studies, including laboratory processing of several thousand plankton samples, management and analysis of the entrainment and source water data, and preparation of final reports.

❖ **Member of State Water Resources Control Board Expert Panel on State Policy for Cooling Water Intake Systems – California State Water Resources Control Board**

Mr. Steinbeck was requested to participate on an Expert Panel that is working with State Water Board staff on reviewing and developing a state policy for regulation of power plant cooling water intake systems.

❖ **Expert Witness Testimony on 316(b) Demonstration Studies – Duke Energy Morro Bay Power Plant**

Mr. Steinbeck designed and conducted statistical analyses to assess the environmental effects of the cooling water intake system at the Morro Bay Power Plant that were used in a hearing before the California Energy Commission. He was also used as an expert witness in the hearings to describe the analyses used in assessing intake cooling water system effects and in answering any questions specific to the studies at the site.

❖ **316(a) Demonstration and NPDES Monitoring – PG&E Diablo Canyon Power Plant**

Mr. Steinbeck is the Principal Investigator for the environmental monitoring at Diablo Canyon where he is responsible for managing and scheduling work conducted by up to 45 staff scientists and technicians. This program includes intertidal and subtidal field studies, intake and offshore ichthyoplankton studies, endangered species monitoring, physical oceanographic data collection, and environmental radiation monitoring. Mr. Steinbeck is also an integral part of TENERA's report production team, conducting most of the data interpretation and statistical analyses. He has also been instrumental in the design of a database system to manage nearly 25 years of environmental data collected at the power plant; retaining the primary responsibility for maintenance and design of all data management, analyses, and reporting activities.

❖ **Expert Witness Testimony on Thermal Discharge Effects – PG&E Diablo Canyon Power Plant**

Mr. Steinbeck designed and conducted statistical analyses to assess the environmental effects of the thermal discharge from the Diablo Canyon Power Plant that were used in a hearing before the Central Coast Regional Water Quality Control Board. He was also used as an expert witness in the hearings to describe the analyses used in assessing discharge effects and in answering any questions specific to the studies at the site.

❖ **316(b) Demonstration – PG&E Diablo Canyon Power Plant**

Mr. Steinbeck was the Principal Investigator for the larval entrainment studies conducted at Diablo Canyon in accordance with Section 316(b) of the Clean Water Act. He was an integral part of the team designing and implementing the study that included nearshore and coastal plankton sampling, enumeration and identification of

larval fishes, zoeal and megalopal crabs, and juvenile/metamorphosing urchins. Mr. Steinbeck helped formulate the innovative proportional withdrawal approach applied for the first time to determine the impacts on this open coastal system and was responsible for all of the programming and analysis of the data.

❖ **Larval Entrainment and Adult/Juvenile Impingement Studies – Duke Energy**

Mr. Steinbeck managed the statistical analysis and database management for projects at the Moss Landing and Morro Bay Power Plants. These projects used fishery-based mathematical models to estimate the impacts on larval and adult populations of animals entrained or impinged in the power plant cooling water intake systems. He was also one of the principal authors of the final reports for both projects.

❖ **Larval Entrainment Studies – Mirant Corporation**

Mr. Steinbeck managed the statistical analysis and database management for a project at the Potrero Power Plant in San Francisco Bay. This project used fishery-based mathematical models to estimate impacts on larval and adult populations of animals entrained by the power plant cooling water intake system. He was also one of the principal authors of the final report for the project.

❖ **Morro Bay Power Plant Intake Structure Siting Studies – Duke Energy**

Mr. Steinbeck was responsible for the management, design, and analysis of data collected at the Morro Bay Power Plant to characterize the epibenthic and infaunal biota in the areas around the intake structure. He also participated in the sampling and was the principal author on the report for the project.

❖ **Prince William Sound Oil Spill Impact Studies – National Oceanic and Atmospheric Administration (NOAA)**

Mr. Steinbeck participated in epibiota studies in Prince William Sound, Alaska under contract to Marine Research Specialists, Ventura, California with funding from the National Oceanic and Atmospheric Administration (NOAA). His duties were monitoring the recovery processes of macro-invertebrates and algae at intertidal rocky sites that were oiled from the spill and exposed to various clean-up methods, assisting in the analysis of data, and preparation of technical reports for NOAA.

❖ **Morro Bay Power Plant Thermal Discharge Effects, Rocky Intertidal and Subtidal – Duke Energy**

Mr. Steinbeck was responsible for the design and analysis of data collected at the Morro Bay Power Plant to characterize thermal effects to the rocky shoreline biota. Sites that were sampled included those that were sampled thirty years earlier by Dr. Wheeler J. North in 1969. Indicator species were used to identify gradients of change associated with thermal dilution of the discharge plume.

❖ **Morro Bay Power Plant Thermal Discharge Effects, Sandy Beach – Duke Energy**

Mr. Steinbeck was responsible for the design and analysis of data collected in a study to determine the effects on sandy beach biota from the Morro Bay Power Plant thermal discharge.

Selected Publications, Presentations, and Technical Reports

- Steinbeck, J. R.**, J. A. Velez, C. Ehrler, J. Carroll, E. Calix, S. A. Witters. 2008. Ichthyoplankton in seven California coastal estuaries: abundance, distribution and seasonal occurrence. Poster presentation at 8th International Temperate Reefs Symposium, Adelaide, Australia.
- Steinbeck, John R.**, J. B. Hedgepeth, J. M. Strampe, and B. Zelenke. 2008. Models for assessing the cumulative effects on larval fishes of multiple power plant intakes in the Southern California Bight. Poster presentation at 8th International Temperate Reefs Symposium, Adelaide, Australia.
- Steinbeck, J. R.**, J. Hedgepeth, P. Raimondi, G. Cailliet, and D. L. Mayer. 2007. Assessing power plant cooling water intake system entrainment impacts. Report to California Energy Commission. CEC-700-2007-010. 105 pp plus appendices.
- White, E. P., Adler, P. B., Lauenroth, W. K., Gill, R. A., Greenberg, D., Kaufman, D. M., Rassweiler, A., Rusak, J. A., Smith, M. D., **Steinbeck, J. R.**, Waidr, R. B. and Yao, J. 2006. A comparison of the species – time relationship across ecosystems and taxonomic groups. *Oikos* 112: 185–195.
- Steinbeck, J. R.**, D.R. Schiel, and M.S. Foster. 2005. Detecting long-term change in complex communities: a case study from the rocky intertidal zone. *Ecological Applications* 15:1813-1832.
- Schiel, D.R., **J. R. Steinbeck**, and M.S. Foster. 2004. Ten years of induced ocean warming causes comprehensive changes in marine benthic communities. *Ecology* 85:1833-1839.
- Calix, R. Ernesto, Ehrler, C.P. and **Steinbeck, J. R.** 2003. Length frequency analysis of larval fishes collected off the coast of central California. Poster presentation at 2003 Larval Fish Conference, Santa Cruz, California.
- Ehrler, C.P., J. Carroll, and **Steinbeck, J. R.** 2003. A comparison of the abundance of larval, young-of-the-year, juvenile, and adult marine fishes in central California. Oral presentation at 2003 Larval Fish Conference, Santa Cruz, California.
- Steinbeck, J. R.**, C. Ehrler, and J. Hedgepeth. 2003. Effects of variation in larval duration on power plant entrainment impacts on larval fishes. Oral presentation at 2003 Larval Fish Conference, Santa Cruz, California.
- Ehrler, C.P., **J. R. Steinbeck**, E.A. Laman, J.B. Hedgepeth, J.R. Skalski, and D.L. Mayer. 2003. A process for evaluating adverse environmental impacts by cooling-water system entrainment at a California power plant. *In* Defining and Assessing Adverse Environmental Impact from Power Plant Impingement and Entrainment of Aquatic Organisms. Dixon, D.A., J.A. Veil, and J. Wisniewski (eds). A.A. Balkema Publ., Lisse.
- Tenera Inc. 2002. Diablo Canyon Power Plant. Receiving Water Monitoring Program: 1995-2002 Analysis Report. Prepared by Tenera, Inc. for Pacific Gas and Electric Company, November, 2002. (Principal Investigator / contributing author / principal statistical analyst).
- Tenera, Inc. 2001. Morro Bay Power Plant Modernization Project 316(b) Resource Assessment. prepared for Duke Energy Morro Bay LLC. April 28, 2000. (contributing author / principal statistical analyst).
- Tenera, Inc. 2000. Moss Landing Power Plant Modernization Project 316(b) Resource Assessment. prepared for Duke Energy Moss Landing LLC. July 10, 2001 (contributing author / principal statistical analyst).
- Tenera, Inc. 1999a. Receiving Water Monitoring Program – 1995-1998 Progress Report. Prepared by Tenera, Inc. for Pacific Gas and Electric Company. (principal investigator / contributing author / principal statistical analyst).

- Kimura, S. and **J. Steinbeck**. 1999. Can post-oil spill patterns of change be used to infer recovery? Pages 339-347 in *Proceedings of the 1999 International Oil Spill Conference*. American Petroleum Institute Publication No. 4686B. Washington, D.C.
- Tenera Inc. 1997. Diablo Canyon Power Plant, Thermal Effects Monitoring Program, Analysis Report. Chapter 1 - Changes in the marine environment resulting from the Diablo Canyon Power Plant discharge. Prepared by Tenera, Inc. for Pacific Gas and Electric Company, December 1997 (Principal Investigator / contributing author / principal statistical analyst).
- PG&E. 1990, 1991, 1992, 1993, 1994, 1995, and 1996. Diablo Canyon Thermal Effects Monitoring Program annual reports. Prepared by Tenera, Inc. for Pacific Gas and Electric Company (Principal Investigator / contributing author).
- Hymanson, Z., D. Mayer and **J. Steinbeck**. 1994. Long-term trends in benthos abundance and persistence in the upper Sacramento-San Joaquin estuary. Interagency Ecological Studies Program. California Department of Water Resources Technical Report 38.
- Steinbeck, J. R.**, J. M. Groff, C. S. Friedman, T. McDowell and R. P. Hedrick. 1992. Investigations into a mortality among populations of the California black abalone, *Haliotis cracherodii*, on the central coast of California, USA. In *Abalone of the World. Biology, Fisheries and Culture*. S.A. Shepard, M.J. Tegner and S.A. Guzman del Proo (eds.). Blackwell Scientific Publ. Ltd., Oxford.
- Blecha, J.B., D.C. Sommerville and **J. R. Steinbeck**. 1992. Aspects of the biology of the black abalone (*Haliotis cracherodii*) near Diablo Canyon, central California. In *Abalone of the World. Biology, Fisheries and Culture*. S.A. Shepard, M.J. Tegner and S.A. Guzman del Proo (eds.). Blackwell Scientific Publ. Ltd., Oxford.
- PG&E. 1988. Diablo Canyon Thermal Effects Monitoring Program Final Report. Prepared by Tenera, Inc. for Pacific Gas and Electric Company (contributing author / principal statistical analyst).
- James, D.E., **J. R. Steinbeck**, E.K. Anderson, and W.J. North. 1986. Use of long-term mean background temperatures to analyze changes and trends in waters off Diablo Canyon, 1986. In *Environmental Investigations at Diablo Canyon. Volume I: Marine Ecological Studies*. D.W. Behrens and C.O. White (eds.). Pacific Gas and Electric Company.
- Steinbeck, J. R.** 1984. A numerical analysis of intertidal algal community structure in Diablo Cove, California. *American Zoologist* 24(3):29A.
- Tissot, B.N. and **J. R. Steinbeck**. 1982. A study of microgeographic variation in *Collisella digitalis* in Diablo Cove, California. In *Environmental Investigations at Diablo Canyon, 1982*. D.W. Behrens (ed.). Pacific Gas and Electric Company.
- Steinbeck, J. R.** 1980. Temperature effects on GABA induced settlement in *Haliotis rufescens* (Swainson). *American Zoologist* 20(4):955.

Professional Affiliations and Certifications

NAUI Certified Advanced SCUBA diver
Western Society Naturalists
Central Coast Biological Society
Ecological Society of America
American Fisheries Society

EXHIBIT B-23
DECLARATION OF FATUMA I. YUSUF, PH.D.


Declaration of
DR. FATUMA I YUSUF
Carlsbad Energy Center Project
(07-AFC-6)

I, FATUMA YUSUF, declare as follows:

1. I am presently employed by CH2M HILL under contract with Carlsbad Energy Center LLC to provide environmental consulting services for the Carlsbad Energy Center Project ("CECP").
2. A copy of my professional qualifications and experience is attached hereto as Exhibit A and incorporated by reference herein.
3. I caused to be prepared or prepared information for **Socioeconomics** in support of the Application for Certification ("AFC") for CECP. Such information was based on my independent analysis of data from reliable documents and sources and my professional experience and knowledge. Specifically, I prepared or caused to be prepared the following:
 - a. AFC Socioeconomics Section 5.10
 - b. Data Adequacy Supplement A
 - c. Project Enhancement and Refinement Section 5.10
 - d. Data Responses to:
 - i. California Energy Commission ("CEC") Staff Data Requests, Set 1A, #36
 - ii. CEC Staff Data Requests, Set 2, #96-97
 - iii. CEC Staff Data Requests, Set 2A, #123-124
 - iv. City of Carlsbad Data Requests, Set 1A, #56
4. It is my professional opinion that the information provided to the California Energy Commission related to the CECP AFC proceeding is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony presented by me and, if called as a witness, could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

December 9, 2009
Date



NAME OF WITNESS

EXHIBIT A

Fatuma Yusuf, Ph.D.

Socioeconomics Task Lead

Education

Ph.D., Agricultural Economics
M.S., Statistics
M.A., Agricultural Economics
B.S., Range Management

Relevant Experience

Dr. Yusuf is an economist and statistician. She has conducted economic analyses for energy, water supply, water quality, agriculture, transportation, and recreation projects; evaluated project feasibility; and assessed economic impacts associated with project implementation. She has experience in preparing the socioeconomic analysis, regional economic impact analysis, cost-benefit analysis, and rate impact analysis. She has developed statistical predictive models and has evaluated the economic impacts associated with base closures and habitat creation. She has been an economics task lead and task manager for a number of Environmental Impact Statements/ Reports (EIS/R) including some on highway development or expansion, high speed rail development, and light rail development.

Representative Projects

Carlsbad Energy Center Project (CECP), Carlsbad, California. Socioeconomics Task Lead. Prepared the socioeconomic analysis section of the AFC for the construction of a combined-cycle facility consisting of two natural-gas-fired turbines, heat recovery steam generators, steam turbine generators, and associated equipment. Also, analyzed the regional economic impacts of the project on employment and income.

GWF Tracy Combined Cycle Power Plant Project (GWF Tracy), Tracy, California. Socioeconomics Task Lead. Prepared the socioeconomic analysis section of the AFC. Also, analyzed the regional economic impacts of the project on employment and income.

Economic Impact Analysis for the Teanaway Solar Reserve, Kittitas County, Washington. Economics Task Lead. Provided screening-level economic, socioeconomic and fiscal impact analyses of the construction and operation associated with the Teanaway Solar Reserve project in Kittitas County, Washington.

Ivanpah Solar Electric Generating System (Ivanpah SEGS), San Bernardino County, California. Socioeconomics Task Lead. Prepared the socioeconomic analysis section of the AFC. Also, analyzed the regional economic impacts of the project on employment and income.

Lodi Energy Center, NCPA; Lodi, San Joaquin County, California. Socioeconomics Task Lead. Prepared the socioeconomic analysis section of the AFC. Also, analyzed the regional economic impacts of the project on employment and income.

Fatuma Yusuf, Ph.D.

Chula Vista Energy Upgrade Project, MMC Energy, San Diego County, California.

Socioeconomics Task Lead. Prepared the socioeconomics analysis section of the AFC. Also, analyzed the regional economic impacts of the project on employment and income.

Application for Certification, Eastshore Energy Project, Hayward, California.

Socioeconomics Task Lead. Prepared the socioeconomics analysis section of the AFC. Also, analyzed the regional economic impacts of the project on employment and income.

Application for Certification, South Bay Replacement Project, Chula Vista, California.

Socioeconomics Task Lead. Prepared the socioeconomics analysis section of the AFC. Also, analyzed the regional economic impacts of the project on employment and income.

Application for Certification for a number of energy projects including the San Francisco Electric Reliability Project in San Francisco, California, and the Walnut Energy Facility in Turlock, California. Economics Task Lead. Prepared the socioeconomics analysis section of the AFC. Also, analyzed the regional economic impacts of the project on employment and income.

Economic Analysis for the Calpine LNG Facility and Power Plant in Eureka, California.

Project Manager. Provided screening-level economic, socioeconomic and fiscal impact analyses of the construction and operation associated with the Calpine LNG and Power Plant Projects in Eureka, California.

Socioeconomic Study Plan for the SMUD Upper American River Project Iowa Hill Pumped Storage Development Project. Socioeconomic Task Lead. Prepared the socioeconomic study plan and evaluated the socioeconomic impacts associated with the Iowa Hill Pumped Storage Development Project as part of the SMUD Upper American River Project Hydroelectric relicensing application. Also, analyzed the regional economic impacts of the project on employment and income.

Revision of SMUD Upper American River Project Socioeconomic Impact Study Report.

Socioeconomic Task Lead. Prepared Revision 1 of the SMUD UARP Socioeconomic Impact Study Report on the SMUD Upper American River Project Hydroelectric relicensing. Revision 1 involved the verification of the study conducted by CSUS. Also, analyzed the regional economic impacts of the project on employment and income.

Industrial Siting Application for a number of energy projects in Wyoming including the Medicine Bow Coal to Liquid Project, Wygen III Unit 5, Seven Mile Hill and Glenrock Wind Energy Projects. Analyzed the regional economic impacts of the projects on employment and income.

Market Assessment of Additional Power Generation on Ute Mountain Ute Reservation, New Mexico. Economics Task Lead. Analyzed the market for future power supply and demand to determine the feasibility of developing additional power generation capability on the New Mexico portion of the Ute Mountain Ute Reservation (Reservation).

Agricultural Impact Study of the PacifiCorp's Hydroelectric Power Project. Analyzed the socioeconomic and regional economic impacts associated with the increased energy costs faced by Klamath irrigators. Prepared the regional economic impact report.

Fatuma Yusuf, Ph.D.

Franks Tract Project, California. Economics Task Lead. On-going project. Estimated the National Economic Development (NED) benefits and determined project feasibility. Project is a joint effort by US Bureau of Reclamation (USBR) and California Department of Water Resources (DWR) and its goal is to improve water quality and fisheries conditions in the Sacramento-San Joaquin Delta (Delta) through the installation of operable gates.

Lower Colorado River Authority (LCRA)-San Antonio Water System (SAWS) Water Project (LSWP). Regional Economics Task Lead. Ongoing project. The project aims to develop strategies that would conserve and develop water in the lower Colorado River basin for both regions (LCRA and San Antonio). Strategies include: reducing agricultural irrigation water demand, capturing and storing unused and excess river flows in off-channel storage facilities, and developing groundwater for limited use in agriculture when surface water isn't available. Task is to evaluate the economic impacts associated with changes brought about by the project to satisfy the required legislative finding that the water transfer will protect and benefit the economic well-being of the lower Colorado River watershed and the LCRA water service area. Economic analysis tools to be used include: benefit-cost analysis, input-output analysis, sector analysis, socioeconomic analysis, recreation benefit analysis, and net environmental benefit analysis.

SR 79 Realignment Project Community Impact Assessment (CIA) and EIR/EIS. Economics/Environmental Justice Task Lead. Prepared the socioeconomics and environmental justice analysis sections of the Draft CIA and EIR/EIS for the SR 79 Realignment Project Domenigoni Parkway to Gilman Springs Road.

Upper Yuba River Study Project Economic Analysis. Economics Task Lead. Prepared the Technical Memorandum on identifying the possible economic impacts from the re-introduction of Chinook salmon and steelhead trout into the Upper Yuba River system.

Ballona Creek Sediment Study, Los Angeles, CA. Economics Task Lead. Prepared the economics appendix of the Marina del Rey and Ballona Creek Feasibility Study Sediment Control Management Plan F4 Report for the US Army Corps of Engineers. Project alternatives designed to control and dispose of sediments were evaluated on the basis of Benefit-Cost ratios.

Pipeline Valuation. Economics Task Lead. Prepared the technical memorandum for the City of Santa Rosa, CA. The technical memorandum analyzed the potential costs associated with incremental capacity increases in the Geysers Pipeline and the City of Santa Rosa's potential capacity and cost sharing options with neighboring cities.

California High Speed Rail Authority (CHSRA) Draft Program EIR/EIS. Socioeconomics/Environmental Justice Task Lead. Prepared the socioeconomics and environmental justice analysis sections of the Draft Program EIR/EIS for the Los Angeles to San Diego via the Inland Empire region.

Hyampon Road Improvement Project, Trinity County, California. Prepared the regional economic impacts associated with the road improvement in terms of income and job creation. The project consisted of approximately 8.6 miles of improvements along Hyampon Road, including widening lanes and smoothing of curves.

Fatuma Yusuf, Ph.D.

Downtown/Natomas/Airport Corridor Alternative Analysis/Draft EIS/EIR.

Economics/ Environmental Justice Task Lead. Prepared the economics and fiscal analysis as well as the environmental justice analysis sections of the Alternative Analysis/Draft EIS/EIR. Also, analyzed the regional economic impacts of the project alternatives on employment, income and property taxes.

Salton Sea Restoration Project Programmatic EIR. Economics Task Lead. Prepared the Agricultural economics, recreation and employment opportunities sections of the Draft Programmatic EIR.

Base Realignment and Closure (BRAC) at Fort Carson and PCMS, Colorado EIS. Prepared the socioeconomic analysis associated with implementing the 2005 BRAC and related activities at Fort Carson and PCMS. Also, prepared the regional economic impacts using the EIFS model.

Imperial Sand Dunes Recreation Area EIS. Economics Task Lead. Prepared the socioeconomics section of the EIS for the Imperial Sand Dunes Recreation Area, Imperial County, CA. The EIS was necessitated by the development of a new Resource Management Plan. Also, analyzed the regional economic impacts of the project and its various alternatives on employment and income.

Natural Resources Liability and Asset Management (NRLAM). Economics task lead. Calculated the human use and ecological service value associated with the natural resource holdings of number of Air Force Bases under the Air Mobility Command (AMC). Primary goal of the valuation was to provide a strategy by which the Bases can use the valuation results to assist in prioritizing and accomplishing its environmental and natural resource goals and mission objectives (e.g., resolving a pending or potential issue with an environmental component). The bases included McChord AFB, Beale AFB, and Fairchild AFB.

EXHIBIT C
APPLICANT'S EXHIBITS

Exhibit List
For
Carlsbad Energy Center LLC ("Applicant")

Exhibit #	Date	Description
1	7/5/2006	Correspondence re Preparation of Applicant for Certification
2	7/10/2007	Modeling Protocol
3	8/9/2007	Revised Modeling Protocol
4	9/11/2007	Carlsbad Energy Center LLC's Application for Certification for the Carlsbad Energy Center Project (Volumes I, II and related Appendices)
5	9/11/2007	AFC - Air Quality Modeling Files
6	9/17/2007	Application for Authority to Construct
7	9/19/2007	Application to City of Carlsbad for Amendment of the Precise Development/Specific Plans
8	9/25/2007	Carlsbad Energy Center Project Courtesy Copies Data Adequacy Checklists
9	10/3/2007	Certification of Representation for Facility ORIS Code 0302
10	10/11/2007	Application for Designation of Confidential Records for Carlsbad, Cover Letter Only
11	10/23/2007	Application for Designation of Confidential Records (Cultural Resources)
12	10/24/2007	Data Adequacy Supplement A
13	10/24/2007	Attachment WR-1A, Waste Discharge Requirements
14	12/13/2007	Response to Staff's Issues Identification Report
15	12/18/2007	Applicant's Responses to SDAPCD's Requests for Supplemental Information (#1-25)
16	12/19/2007	Applicant's PowerPoint Presentation from Site Visit & Informational Hearing
17	12/20/2007	Phase II Site Assessment (Attachment DR73-1)
18	12/20/2007	Electronic Modeling Files
19	12/20/2007	Applicant's Responses to Staff's Data Requests, Set 1A (#1-73)
20	12/20/2007	Interconnection System Impact Study (Attachment DR53-1 to Data Responses)
21	12/20/2007	Report on Soil Remediation Encina Power Plant (Attachment DR73-2 to Data Responses)
22	12/26/2007	Supplemental Air Modeling Information Submitted to the San Diego County Air Pollution Control District (Application Nos. 985745-985748)
23	2/1/2008	Applicant's Response to Questions from Wesley Marx, Resident of Carlsbad
24	2/6/2008	Responses to City of Carlsbad's Data Requests, Set 1A (#49-61)
25	3/18/2008	Responses to Staff's Data Requests, Set 2 (76-112)
26	4/17/2008	Offsite Alternatives Analysis
27	4/18/2008	Emissions Baseline Calculations for the Existing Boiler Units Submitted to SDAPCD
28	4/29/2008	Site Preparation & Construction Stormwater Management & Pollution Prevention Plan
29	5/7/2008	Applicant's Response to City of Carlsbad's April 25, 2008 Memorandum
30	5/29/2008	Letters of Support
31	6/3/2008	Project Consistency with City of Carlsbad Land Use Ordinances
32	6/5/2008	Applicant's Responses to Staff's Data Requests, Set 2A (#113-124)
33	6/16/2008	Authority to Construct - Monitoring Plan for Compliance Testing and CEMS Accuracy Audit
34	7/1/2008	Non-Cancer Acute Health Hazard HRA Revised Modeling
35	7/25/2008	Project Enhancement and Refinement Document
36	7/30/2008	Correspondence to SDAPCD re NOx Emissions

Exhibit #	Date	Description
37	8/12/2008	Letters of Support
38	8/12/2008	County of San Diego's Approval of Site Work Plan
39	8/15/2008	NPDES Permit Application
40	8/21/2008	Letters of Support
41	8/25/2008	Letter re lack of issues related to Coastal Commission non-participation
42	8/27/2008	Revised Emissions Baseline Calculation for Existing Boiler Units 1, 2, and 3 at Encina Power Station
43	9/3/2008	Letters of Support from Ocean Hills' Deputy Mayor Rocky Chavez
44	9/4/2008	CECP Rain Permit Application & Statewide Compliance Certification
45	9/12/2008	Applicant's Responses to Staff's Data Requests, Set 3
46	9/25/2008	Letters of Support
47	9/25/2008	Additional Acute Health Hazard Modeling Analysis
48	10/14/2008	Applicant's Responses to City's Data Requests, Set 3B
49	10/21/2008	Applicant's Responses to Staff's Data Requests, Set 3A #126-131
50	10/23/2008	Applicant's objections to Center for Biological Diversity's Data Requests
51	10/30/2008	Request for Easements for Vista/Carlsbad Interceptor Sewer Replacement Project
52	11/3/2008	Applicant's Status Report
53	11/4/2008	SDRWQCB correspondence re CECP NPDES Permit Application
54	11/7/2008	Applicant's Fire Risk and Emergency Response Assessment Report
55	11/17/2008	Applicant's Response to CURE's Document Request
56	11/20/2008	Applicant's Response to Center for Biological Diversity's Petition for Order Directing Responses to Data Requests
57	11/20/2008	Correspondence from SDG&E re 230kV Switchyard Expansion
58	11/21/2008	Preliminary Determination of Compliance from the SDAPCD
59	12/3/2008	Applicant's Status Report, December 2008
60	12/8/2008	Letter of Support from Andrew Howard
61	12/10/2008	Correspondence to SDAPCD re mailing of Notice of PDOC
62	12/29/2008	Applicant's Record of Conversation with California Department of Fish & Game
63	1/5/2009	Applicant's Comments of SDAPCD's PDOC
64	1/16/2009	Editorial Publication from the San Diego Union Tribune and North Coast Times
65	1/26/2009	Applicant's Response to CBD's Data Requests (A1-G1)
66	1/28/2009	Memorandum re Service of Responses of CBD's Data Responses
67	1/30/2009	Applicant's Opposition to City's Motion for Revised Preliminary Staff Assessment
68	1/30/2009	Applicant's Status Report, January 2009
69	1/30/2009	Applicant's Comments to PSA
70	2/13/2009	Revised Air Emissions Data (NOx Emission Reduction Credits; Revised NOx Baseline Calculations)
71	2/19/2009	Applicant's Responses to Staff's Data Requests, Set 4 (#142-158)
72	3/10/2009	Press Release from SD Regional Chamber of Commerce
73	3/10/2009	Correspondence from Bruce Wolfe
74	3/13/2009	February 26, 2009 and March 9, 2009 Correspondence to SDAPCD from Michael Carroll (NRG) re SDAPCD, Rule 20.3(e)(1) Statewide Compliance Certification
75	3/13/2009	Fire Code Compliance Table, CECP Fire/Emergency Site Access Routes Diagram, and Related Correspondence to City of Carlsbad
76	3/13/2009	Summary of Cumulative Impact Air Quality Monitoring
77	3/13/2009	Applicant's Status Report - March 2009
78	4/8/2009	Letter of Support from San Diego Regional Chamber of Commerce
79	4/8/2009	Request Change to POS

Exhibit #	Date	Description
80	4/9/2009	Applicant's Objections to City of Carlsbad's Data Requests, Set 4 (#142-151)
81	4/9/2009	Correspondence re Elimination of Dual Fuel Requirement
82	4/9/2009	Notice of Submittal of Application for Designation of Confidential Records
83	4/20/2009	2007/2008 Fuel Use and NOx Emission Information
84	4/24/2009	Supplemental Fire Risk Assessment
85	4/24/2009	Applicant's Status Report, April 2009
86	4/29/2009	Supplemental Health Risk Assessment
87	5/1/2009	Applicant's Response to City of Carlsbad's Petition Compel Response to Data Requests
88	5/4/2009	VOC Emission Reduction Credits (Certification Nos.)
89	5/19/2009	Notice of Application for Designation of Confidential Records
90	6/5/2009	Applicant's Status Report, June 2009
91	6/8/2009	Correspondence to EPA re Prevention of Significant Deterioration Non-Applicability Determination Request
92	6/19/2009	Objections to POV's Data Request, Set 1
93	6/23/2009	Correspondence to SDAPCD providing supplemental data re fuel use for Encina Units 1, 2, and 3 (2002-2006)
94	7/2/2009	Response to City of Carlsbad's Letter re SDG&E's RFO
95	7/7/2009	Response to Executive Director Jones' approval of Application for Confidential Treatment
96	7/14/2009	Opposition to Power of Vision's Petition to Compel Response to Data Requests
97	7/17/2009	Status Report, July 2009
98	8/4/2009	Letter of Support by SDREDC
99	8/4/2009	Correspondence from City of Del Mar
100	8/6/2009	SDAPCD's Final Determination of Compliance
101	8/11/2009	Correspondence to the Mayor of Solana Beach
102	8/19/2009	Response to South Carlsbad Redevelopment Agency's Petition to Intervene
103	8/25/2009	Encina Power Plant Annual Emissions Data (1997-2008)
104	9/1/2009	Status Report, September 2009
105	10/8/2009	Applicant's Response to Power of Vision's Data Request, Set 1
106	10/12/2009	Applicant's Status Report, October 12, 2009
107	10/12/2009	Response to POV's further Petition to compel response to Data Requests
108	10/27/2009	Applicant's correspondence to City of Carlsbad officials re the City's proposed ordinance CS-067 (moratorium)
109	11/23/2009	Letter of support

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV

APPLICATION FOR CERTIFICATION
FOR THE CARLSBAD ENERGY
CENTER PROJECT

Docket No. 07-AFC-6
PROOF OF SERVICE
(Revised 12/8/2009)

Carlsbad Energy Center LLC's
Opening Testimony, Preliminary Identification of Contested Issues,
& Witness and Exhibit Lists (Exhibits Included on CD-Rom)

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 07-AFC-6
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

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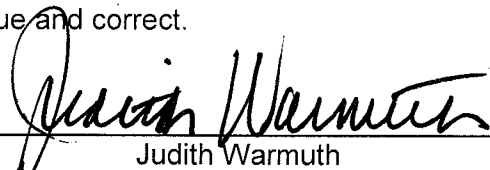
DECLARATION OF SERVICE

I, Judith Warmuth, declare that on December 15, 2009, I deposited copies of the aforementioned document in the United States mail at 500 Capitol Mall, Suite 1600, Sacramento, California 95814, with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above.

OR

Transmission via electronic mail was consistent with the requirements of California Code of Regulations, Title 20, sections 1209, 1209.5, and 1210. All electronic copies were sent to all those identified on the Proof of Service list above.

I declare under penalty of perjury that the foregoing is true and correct.



Judith Warmuth